

UNITED STATES DEPARTMENT OF AGRICULTURE

THE RENEWABLE ENERGY SYSTEMS AND ENERGY  
EFFICIENCY IMPROVEMENTS FARM BILL -- SECTION 9006

Tuesday, December 3, 2002

[TRANSCRIPT PREPARED FROM A TAPE RECORDING.]

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## P R O C E E D I N G S

MR. ELLISON: My name is Bob Ellison. I am pleased to act today as moderator and as timekeeper.

Today, Rural Development is holding a public meeting for interested persons to express their views on developing regulations for implementation of Section 9006, the Renewal Energy Systems and Energy Efficiency Improvements Program, created with the passage of the 2002 Farm Bill.

As published in the Federal Register, this meeting will end today at 3:00 p.m. but written testimony is allowed through December 6, 2002.

Before I introduce Rural Development Under Secretary Thomas Dorr, please allow me to cover a few housekeeping items. Any time you are walking in the halls, you will need to display the guest ID provided to you when you checked in this morning. Our meeting today will run without break, throughout the day, with one exception. We will break from 11:30 a.m. to 12:30 p.m. for lunch.

Speaking of the lunch break, the cafeteria is located out the doors and to the right. Proceed to Wing 3 and turn right again. The cafeteria is halfway down the hall. The map is in the folder you received. Restrooms are located out the doors behind and to the left in Wing 6, opposite direction of the cafeteria.

A complete list of participants will be available in the entrance way after lunch. Please turn off any pagers or mobile phones during the meeting. Information on Rural Development programs can be found at [www.rurdev.usda.gov](http://www.rurdev.usda.gov).

It is now my privilege to introduce to you the Under Secretary for USDA Rural Development, Thomas C. Dorr. Mr. Dorr was appointed by President George W. Bush to be the Under Secretary for Rural Development and was sworn into office by Agriculture Secretary Ann M. Veneman on August 9th, 2002.

As Under Secretary, Mr. Dorr oversees the USDA Rural Development mission area which consists of three agencies, \$14 billion annual funding authority for loans, grants, and technical assistance to rural residents, communications and businesses, and an \$80 million portfolio of existing businesses, housing and infrastructure loans to rural America.

Rural Development has over 7,000 employees located across the United States and in Puerto Rico, the Virgin Islands, and the Western Pacific Trust Territories.

Mr. Dorr has broad agricultural, financial and business experience. He has served as a member of the board of directors of the 7th District Federal Reserve Bank of

Chicago, the Iowa Board of Regents from 1991 through 1997, and as a member and officer of the Iowa and National Corn Growers Association.

Prior to his current appointment, Mr. Dorr was the president of Family Company consisting of a corn and soybean farm, a state-licensed commercial grain elevator and warehouse, and two limited liability companies, Vetfinish Wein [??]. Mr. Dorr, from Marcus, Iowa, graduated from Morningside College.

MR. DORR: Thank you, Bob. Before we get underway this morning, I would like to take just a moment to thank Bill Hagy [ph] and his staff. Bill is the Associate Administrator of the Rural Business and Co-op Service at Rural Development, along with a number of other groups from across our missionary for putting this event together today, they've done a great job, and please join me in around of applause to Bill and his crew.

[Applause.]

MR. DORR: Again, thank you, Bob, and good morning everyone. Let's try it again. Good morning everyone.

EN MASSE: Good morning.

MR. DORR: Great. On behalf of USDA's Rural Development and the Bush administration, I would like to welcome everyone here this morning, particularly those of you who are viewing via the Internet. I would also encourage you to submit your comments or testimony electronically as you see fit. This is an exciting time in rural America. It is a time when our country and our President are turning to our farmers, ranchers, and rural businesses for their knowledge and resources in order to help America become energy independent and more economically strong.

Today's meeting is especially important because we wish to ensure that as we implement the renewable energy section of the 2002 Farm Bill, we do it in a way that is useful to those of you who may best be able to develop and implement these opportunities.

Frankly, in my opinion, you are the ones who are on the frontlines in creating renewable energy opportunities and it is most important that you have a say in how best to accomplish this goal and fulfill these opportunities for rural America.

Our task force has invited several decision makers this morning to hear your comments, along with our Rural Development administrators and specialists in the fields of taxation and energy. We will introduce each of them to you in just a few minutes.

But first, I'm very pleased to have with us this morning, to kick off today's hearing, a distinguished gentleman who I

have known and respected for many years. He serves as the Deputy Secretary for the Department of Agriculture. Jim Moseley.

Prior to his appointment, Jim and his wife, Kathy, raised seven children and farmed for 32 years on a farm located near Clarks Hill, Indiana. He's owned and operated a very successful grain and hog operation. Jim has, for years, exhibited a keen interest in public policy and leadership issues. Jim has served as agriculture advisor to the administrator of EPA from 1988 through 1989, and as the Assistant Secretary of Agriculture for Natural Resources and the Environment, from 1990 through 1992.

His real forte is leadership. He has provided it in the area of resource management, environmental issues of all kinds, agricultural policy, and now Homeland Security. And yet, when I've watched, I've gained the most respect for the Deputy and how he expends his time and wisdom with young leaders, both at the Department and throughout the country.

Jim is a true gentleman whom I am privileged to call my friend. Jim is also a determined friend of agriculture and rural America. His insight, vision, and wisdom are valued and sought, not just by me, but policy makers from across the country, around the world, and especially by his peers here at USDA.

It is now my great honor and a distinct privilege to introduce the Honorable James Moseley, Deputy Secretary of the United States Department of Agriculture.

[Applause.]

MR. MOSELEY: Thank you, Tom. You are much too kind. That was a very eloquent introduction. I appreciate it. Good morning.

EN MASSE: Good morning.

MR. MOSELEY: Tom, I thought you had 'em warmed up here. Now this is a "hot" topic. Good morning.

EN MASSE: Good morning.

MR. MOSELEY: That's more like it.

It's a pleasure to be here. I want to welcome those of you from outside the Department. I know that we have many people within the Department that are in attendance today, but especially those out there on the Internet. I want to welcome you to USDA and the new technology that we now have in the way that we can expand our communications capability and reach out, touch so many more people, and so many more ideas to work towards developing better policy and that's what this is all about.

I want to recognize--they're going to think this is a "love fest," Tom--but I want to recognize Tom Dorr. He started talking about energy from the first day he walked in this Department and he hasn't quit talking about it since. I also want to recognize Keith Collins, because Keith has been on the energy track for, it seems like forever, Keith. You were involved in energy when I was here, ten, twelve years ago.

I told Keith I was going to tell a story about him. He said, "Oh, dear!" But when we were working back--it's been a year or so ago--on the National Energy Strategy, and it became apparent that renewable fuels was going to be a key component of that, Keith made the comment, and you all know that Keith isn't known to overstate things at all, he's a very calm and distinguished individual.

But I remember him saying, "This is a big deal." Energy is going to be a "big deal" for agriculture. I think that pretty well define what we're here about, because it is a "big deal."

As you all know, this is an issue that's also very important to President Bush. I think Tom was there before the President was elected and had some discussions with the President about energy, about renewable energy. So it's important to the President, it's a critical part of his National Energy Plan.

I think just as important, this year's Farm Bill. For the first time ever, it's historic; for the first time ever has an energy title.

Putting that in the Farm Bill represents a fundamental shift in terms of policy and the intersection between agriculture and energy.

As someone who has spent a lifetime in farming and agriculture, renewable fuels and bioenergy have come to represent some of the most exciting and dynamic issues for the future of American agriculture.

In the past, we talked about the great potential. We talked about the opportunities that were out there. I remember, 20 years ago, I was talking about ethanol. We've dreamed for a long time. But today, we finally are at a point where that potential is ready to be harvested, and what were once just academic concepts, at a time when we struggled with the economies of scale and the efficiency of producing renewable fuels, we now find ourselves in a position where we can develop new, viable, emerging industries.

The President shares this vision, and he understands the promise of renewable energy. What renewable energy is about is economic opportunity for rural America. Economic opportunities that in some regions of this country are going

to redefine farming. It's going to give some of those land values a higher level of return.

It defines an energy that is more environmentally friendly as we talk about global warming and carbon sequestration. We're talking about a carbon cycle where it's produced, it's used, it goes up, and we recapture it, and we use it again.

It puts less reliance on foreign energy imports, and therefore it gives us an enhanced ability to provide for a growing energy need, and that's one of the things that we have to remember. Energy needs of this country are not stable nor static. They're growing. But of course all of you know the benefits of energy. Otherwise you wouldn't be here today.

The reason you're here is to help advance this concept from the dreams, the ideas of the past, into the reality of today and tomorrow. To find new ways to make renewable energy and take it from the drawing board and put it out there on the power grids and the gas pumps.

Although billions have already been invested, and renewable energy is thriving in examples throughout the country, we have to understand that we are really in the very infant stages of development of this critical technology.

The work we do, the policies that we're going to develop, in effect, the next few weeks and months as a result of the discussions that we are going to have here today, is going to have a lasting impact on how well we move forward in the future.

For example, it's going to be important to find viable ways for individual producers to compete as energy producers. It's impractical to think that each producer can generate enough electricity or produce enough liquid fuel to individually be a viable supplier.

We've already tried that several years ago. Some of you who have been in this area for some time may remember, out there on the farms, where we tried to put in these small stills and produce energy. It didn't work. It didn't work because the fixed cost at that level was too high.

The partnerships, or cooperatives, or some other innovative way needs to be developed so that the economic benefits of renewable energy reaches the farm as well as the Fortune 500s.

That's why it's so important that we take time to think outside the box, and I will state again, at USDA we have a very effective and solid team working to do that on these issues in Keith Collins and Tom Dorr. You can also add my name to the list because this is important, and it must reach to the highest levels.

We're also proud to have forged a good and close working relationship with our friends at the Department of Energy. They've been great to work with. This really is a team effort, mainly, I think because the President is so highly interested in the area, and for those of you who have studied this President, you begin to understand that he's one that doesn't believe that turf battles is any kind of an excuse to slowing progress.

It's a farmer's story, and I apologize perhaps for that, but I think it reflects and summarizes the message that I want to share this morning.

In the fall of the year, you're out harvesting corn and soybeans, and you get away from the noise of the combine and the grain drier, and all of a sudden you hear 'em. You hear 'em long before you see 'em. If you keep watching, they finally come into view. In terms of biological cycles, this is as dependable as the sun coming up in the morning, as the flight of the Canadian geese heading south for a warmer winter. As you look up and you see 'em off in the distance, they're flying in that typical V pattern. Now it turns out that the mystery has been unraveled.

A couple of engineers, probably Purdue engineers, I suspect--but a couple of engineers studied that and they learned that each bird, by flapping its wings, created an uplift for the bird behind. So flying together, what they figured out was, and they measured this--by flying in that V pattern, the whole flock gains something like 70 percent additional distance, flying as a group, than if they were flying alone.

Even better, when that lead bird gets out there, and he's taking all the resistance, he gets tired, and if you watch 'em for any length of time, you'll see that lead bird slip over to the side and fall back, and another lead bird moves to the front and provides the front resistance, a block against the resistance for the entire flock.

I think that example speaks volumes about what we're about here today. We too need to move forward in a similar formation to accomplish more, do it better, and do it fairly quickly. Government agencies, the private sector, producers, farmers out there, and those that depend on energy for their economic well-being--everyone, all of those people have a role to play and a stake in the success of work that we are doing on renewable fuels.

So we thank you for your commitment, for taking the time to be here with us today, your interest in this issue. We hope that we have a good discussion today, exploring the opportunities that are there, but only lacking the collective insights that you all can provide.

I would ask that you please share your thoughts, your ideas. We'll even take a few opinions. But we want to hear from you. It is important because we are at the beginning of a



major new area of development, a major new policy area in renewable energies, and quite frankly and simply put, we need your help and your insight.

Thank you very much.

[Applause.]

MR. DORR: Thank you, Jim.

I realize that we're gathered together today specifically to partake of your wisdom, to get your input, but if you would allow me the prerogative of the chair for just a moment, I have a couple of things I would like to go through to lay the groundwork for what we're about today, and before I start that, I would like to reiterate one comment Jim made a couple of times.

That is, in fact, that in May of 1999, then Governor George W. Bush, made it very clear to me that he was strongly committed to a renewable energy policy that particularly would lessen our dependence on foreign and imported oil. So what Jim has said is not something that should be taken lightly. This is a strong, strong commitment from this President and this administration.

So let me begin. As a farmer from Iowa, I've seen firsthand how renewable energy has had major economic benefits for rural America and for the farming way of life. These renewables included ethanol, biodiesel, the wind, solar, and many other just-emerging technologies. There is no question that energy is a vital and important part of the future for agriculture and rural America.

I assure you that USDA's Rural Development is firmly committed to working with producers, cooperatives, and businesses to help them develop the business opportunities and plans, to secure the financing they need in the development of renewable energy ventures.

In the last two years, Rural Development has--and I think this is important--just in the last two years, we have financed 73 loans and grants in 25 states, totaling \$45 million, to fund bio-based and bioenergy-related businesses. This is a step in fulfilling the objective of President Bush's energy plan.

Today's meeting is part of a significant new collaborative effort between agencies within USDA, which include not just Rural Development but the Farm Service Agency and the Natural Resource and Conservation Service, and we are collaborating intergovernmentally, as has already been explained, with the Department of Energy, the Environmental Protection Agency, and others.

For me and others, it is refreshing and encouraging to see this level of collaboration and cooperation.

This is a good team and one that is committed to working to speed the review and approval processes needed to more rapidly develop renewable energy throughout the country.

I appreciate everyone who is here today serving as a panelist or as support staff for your dedication and the fine representation that you provide. But as has already been said, we also need to look at other ways Government can facilitate and encourage expanded use and production of renewable fuels and energy.

Tax incentives, tax exemptions, utility credits, or other innovative ways we can spur this emerging industry need to be explored.

We need also to be looking at the regulatory environment. Are there ways to develop regulations and rules which acknowledge the myriad of pricing regulations and yet can be utilized to encourage this growth? For example, how can we exploit the opportunities inherent in the renewable short grid distributive energy generation systems without creating too many artificial incentives or disincentives.

This is a time of enormous transformation in American agriculture. We need to be bold in recognizing and capitalizing on these new opportunities. Energy is unquestionably one of these areas that presents enormous opportunities for economic gains, and ultimately, an improved quality of life.

Our challenge is to see the potential, understand the value, and take the risks to turn these opportunities into progress and economy growth, and this, in turn, brings me to the purpose of today's meeting.

The Farm Security and Rural Investment Act of 2002 included for the first time, as Jim indicated, an energy title, which focuses on renewable energy systems and energy efficiency improvements.

We will focus today on Section 9006, which establishes a grants, loan, and loan guarantee program to assist eligible farmers, ranchers, and rural small businesses in purchasing renewable systems, and for making energy efficiency improvements.

The provision provides funding from 2003 through 2007 at \$23 million per year. Of course that could be potentially higher, depending on how much of the funding is utilized for grants versus loans or loan guarantees. There are two primary provisions that you should keep in mind. First, the grant amount is not to exceed 25 percent of the activity being funded, and second, the combined loan grant funds are not to exceed 50 percent of the cost of the activity being funded.

We also identified six areas to be considered when making renewable energy system loans and grants, and they are first, the type of system to be purchased, the estimated quantity of energy to be generated, the environmental benefits of the system, the extent of system replication, the expected energy savings, and the estimated length of time for energy savings to equal the cost.

Now determining the grant or loan amount and general parameters for what should be accomplished were outlined in the statute. What hasn't been done, and the reason for seeking your input today is, How will the USDA Rural Development implement Section 9006? In announcing this meeting, we identified seven specific questions where we hope to gain your insight and advice, and they are as follows.

First, what projects should be eligible for funding? Second, should certain types of projects receive priority for funding? Third, should preference be given to new innovative technologies or proven technologies?

Fourth, what type of financial assistance is most needed? For example, is it grants or direct loans or loan guarantees?

Fifth, what other factors, if any, should the Department consider in determining the amount of a grant or a loan?

Sixth, should certain types of projects or geographic areas be targeted and given preference for financial assistance?

Finally, what other various sources of program matching funds are available?

So, in conclusion, it is important today that we obtain your input in addressing these questions. Any additional ideas that you may wish to share with us will be equally helpful, and as I said at the beginning of this meeting, this is an exciting time in rural America.

By working together, we hope to increase economic opportunities and improve the quality of life for all rural Americans, and if we do this, we will create a stronger rural economy and a country much less dependent on imported energy supplies.

So at this time we look forward to your testimony and I'd like to turn this back over to our moderator, Bob Ellison, for announcements and introduction of our panel. Thank you.

[Applause.]

MR. ELLISON: Also joining us today is a listening panel. The panelists include Under Secretary Dorris; Merlin Bartz, Special Assistant to the USDA Under Secretary of Natural Resources and Environment; Keith Collins, USDA Chief Economist; Hank Zigmund, Special Assistant and Advisor to

the Agricultural Counselor at the Environmental Protection Agency; and Denise Swink, Board of Directors, Energy Efficiency and Renewable Energy, DOE. Not participating on the panel but here today with us are members of the USDA Rural Development Leadership Team that will be instrumental in implementation of this program, and other critical Rural Development programs. Please stand as I read your name.

Deputy Under Secretary Gilbert Gonzalez. Thank you.

John Rosso is the administrator of the Rural Business Cooperative Service.

Art Garcia is the Rural Housing Service Administrator.

Representing Rural Utility Service Administrator Hilda Legg, who is out of town, is Deputy Administrator Curtis Anderson.

And Louis Luna [ph] is the Deputy Administrator for Community Development.

We are pleased to also have several experts in the area of taxation and energy joining us as well.

Now it is time to begin the public testimony portion of this meeting. Each presenter has been contacted and made aware of today's proceedings. Each will be allowed ten minutes. I will act as the official timekeeper and give a one minute warning, and then a 30 second warning.

Given the number of presenters, please keep to your allotted time.

Each presenter is asked to come to the podium to present. PowerPoint presentations are allowed, if submitted in advance. When presenting PowerPoint, please indicate to the computer operator when the next slide is required.

We will proceed in order and I ask that you enter through the doors to my right one minute before your time to minimize the transition time between presentations.

To help expedite the process, Dave Coombs and Mike Kossey will help usher the presenters to the stage and back to their seats. Please follow their instructions.

Now for our panel. Merlin Bartz is a Special Assistant to the USDA Under Secretary of Natural Resources and Environment. Merlin was selected as Special Assistant to the Under Secretary for Natural Resources and Environment at the U.S. Department of Agriculture in January 2002. In that position, Bartz assists in the policy direction of the programs of USDA's Forest Service and Natural Resources Conservation Service.

Keith Collins, Chief Economist of the U.S. Department of Agriculture. As Chief Economist, Keith is responsible for

the Department's agricultural forecast and projections, and for advising the Secretary of Agriculture on economic implications of alternative programs, regulations and legislative proposals.

He is responsible for the Office of the Chief Economist, the World Agricultural Outlook Board, the Office of Risk Assessment and Cost Benefit Analysis, the Global Change Program Office, and the Office of Energy Policy and New Uses.

Denise F. Swink, Member, EERE Board of Directors, Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy. As a member of the board of directors since July 2002, Ms. Swink provides strategic input to programs, products, and services managed and implemented by the Department of Energy's Office of Energy Efficiency and Renewable Energy. Investments in research, development, demonstration and deployment of \$1.4 billion per year further the nation's improvements in energy efficiency and adoption of renewable technologies, near, mid, and long term.

Hank Zigmund [ph] is a Special Assistant and Adviser to Jean Pelltier [ph], who is the agricultural counselor at the EPA administrator. Later this afternoon, Don Viviani [ph], senior science advisor on economic policy to the EPA administrator will represent EPA on this panel.

We ask that each presenter today adhere to the 10 minute limit due to the large number of individuals wanting to provide testimony.

MR. ELLIOT: Thank you. If I can have the first of my overheads. I'm Neil Elliot. I'm the industrial program director at the American Council for an Energy Efficient Economy located here in Washington, D.C.

Under Secretary Dorr, Deputy Secretary Moseley, distinguished members of the panel, thank you for the opportunity to address you today. This is an exciting opportunity for me. Ten years ago, I came to Washington, leaving a position in North Carolina running, having run agricultural energy programs for eight years. So it's nice to be back, involved with this. It's been an opportunity also to work with the USDA staff and the Senate agricultural staff in the crafting of the 9006 section. Next slide, please.

ACEEE is a private, nonprofit located here, in Washington, D.C. We're a small group. We are a nonmembership organization and undertake research activities. Next slide, please.

This activity we're going to talk about today is a Farm Program survey that we undertook in response to a challenge issued by Keith Collins, back in August, when we had our

first meeting. At that time, Keith had indicated that he wanted to see what was out there in terms of programs that were actually being run.

So in support of that, we actually went out and tried to look at what programs were actually out there operating on energy efficiency and renewable energy.

This is not a comprehensive survey but it gives you a flavor for what is being done out there. Certainly, the level of activity has diminished over the last ten years, since the funding was cut, but what we found is a lot of activity continues to take place out there.

One comment with respect to the energy efficiency and renewable energy aspects. One of the things I think that's important, many people think of renewable energy as the big opportunity. One of the things I would challenge the members of the USDA and to the panel is that energy efficiency is a prerequisite for renewable energy, because you've got to be efficient in order to make the most economic use of the renewable energy asset. If you can--next slide, please.

We were able to identify 34 programs operated by 23 entities around the country. The programs are diverse, both in their geographical distribution and funding base. Many of these programs are run through what are called public benefit funds or system benefit charges. Some are administered by state agencies, some by electric utilities, others by nongovernmental organizations.

There are also other programs that are funded directly by either federal or state monies. All the programs that we identified, one of the criteria was either they are currently undergoing or have plans to undergo what we call measurement and evaluation review, and this is required by administrators, both the utility administrators or state administrators, to assure that the monies are actually going for something and the results are actually being delivered. Next slide, please.

As I mentioned, funded through public benefit funds, either state or utility funding. Most of them focus on electricity and cover all types of farms, with the focus being fairly nonspecific because of the general applications that you see for electricity on the farm.

The one thing that we did find most common, and we see this because of the dispersion of the dairy industry across the U.S.--dairy farms were singled out as being one of the big opportunities that had been identified, and we saw a lot of programs out there focusing on them.

The services provided were quite varied, ranging from support of specific products or technology to broad energy efficient education, surveys, things like that. Some of the

fund programs have co-funding available. Some are identifying opportunities but are wanting in terms of actually having the co-funding available to implement the program.

Our recommendations. We think that you should focus on programs that are existing. This gives you a couple of opportunities. Number one, it allows the program monies that are available under 9066 to be implemented immediately and get projects actually on the ground. Many of these programs, as I mentioned, do have co-funding already available, so we think that's an excellent opportunity to leverage the existing monies that are out there, so we can get the maximum impact.

Also the use of the existing Farm Program means that you have programs that are already identified out there, opportunities, for example, a program in Vermont has actually gone out and surveyed the opportunity at every single dairy farm in Vermont. So the opportunities are there waiting to be implemented. So there's not a lag time associated with start-up.

Also, I think it's probably worth thinking in terms of generalizing the programs, because you don't want to focus necessarily, initially, on a particular opportunity. The opportunities, as I learned ten years ago, and more, were that on the farm, there are just so many opportunities, that it's hard to pick the best choice.

Finally, the information that is presented here, each of the panelists has received a copy of our written comments and the survey results. That information will also be available on the ACEEE Web site, [aceee.org](http://aceee.org), and I'd like to acknowledge the assistance of my associate, Elizabeth Brown, who undertook the survey and was largely responsible.

Thank you, again, for the opportunity and I wish you the best in your deliberations.

MR. : [inaudible].

MR. : Sure; sure.

MR. : I just want to thank Neil for this survey and if this is up on your Web site, one of the comments you said was you thought that it wasn't necessarily complete.

MR. ELLIOT: We would certainly welcome the opportunity of other people to present the information, if you will contact us through the Web site. It's already up there.

MR. : Right. You list all the states, all the projects, and if people have additional ones that weren't identified, if they could e-mail those to you, then we could get a good, complete list. That would be a terrific help to us.

MR. ELLIOT: We would appreciate the opportunity to work with you and support you in that regard.

MR. : Thank you.

MR. FORWARD [ph]: Thank you for the opportunity to testify. My name is Jeff Forward. I'm a program manager for the Biomass Energy Resource Center.

BERC, the Biomass Energy Resource Center is a national nonprofit organization with a mission to promote and facilitate the installation of biomass technologies in relatively small installations. Among other things, we help states design and deliver programs that promote wood chip heating in schools, and we co-manage with the Vermont Department of Agriculture, the Vermont methane program, promoting methane recovery for energy and Vermont dairy farms. I was actually heartened to hear the previous speakers speak about Vermont.

I've come to this hearing to present oral testimony on how these funds may be used to promote methane recovery and to give you written testimony prepared by my partner, Tim Maker [ph], on how these funds may be used to promote the use of advanced biomass boilers to provide heat on farms, ranches, and for small rural businesses.

In addition, the Vermont Department of Agriculture, our partner in administering the Vermont methane program, will be sending a letter to this committee by the end of the week to provide you with additional input.

The reason we are putting such effort into this testimony is that all of us believe that this portion of the Farm Bill is ideally suited to give these technologies the help they need to become mainstream technologies on farms and in small businesses throughout the country.

Now as far as anaerobic digestion goes, you're probably aware that dairy manure holds a myriad of benefits to farmers and to society, doing anaerobic digestion. It can help farmers reduce their impacts on water quality. It can improve air quality by reducing methane emissions, a greenhouse gas 21 times more potent than CO2.

It is a renewable energy source that can reduce our dependence on fossil fuels, while, at the same time, reduce production costs, and even provide on-farm income for many farmers.

It can also improve the quality of life of farmers and their neighbors by reducing odors and fly populations.

Section 9006 of the Farm Bill has the potential to dramatically advance anaerobic digestion technology and its application over the next four years. We have specific



suggestions and recommendations relative to what you asked for ,and I'll work my way through those.

First, you asked about projects, what types of projects should be eligible for funding. Anaerobic digestion technology is on the verge of mainstream commercialization. The biggest barrier to widespread adoption is the up-front capital cost of these systems.

We recommend that the committee set aside at least one-half of the \$23 million annual funding for cost share specifically for anaerobic digestion.

We do not believe that the committee should discriminate between different types of anaerobic digestion technologies. There are many different approaches to anaerobic digestion that hold promise.

Farms, by their nature, are unique operations. This means that in most cases methane recovery systems will need to be individually designed for the management practices and nutrient management needs of each individual farm.

Other sections of the bill deal with research and innovation. This section should help farmers with the up-front costs of these technologies and let them decide which are best for their situation.

You asked about the differences between loan guarantees and grants. We believe the grants would be most useful. Farmers already have access to low-interest financing, and providing them the opportunity to increase their debt load is not necessary and may even be counterproductive.

States should receive block grants that they in turn can administer. The model could be the EQUID [ph] program that's administered by the NRCS through states and local offices.

You asked about grant size and other considerations. A typical methane recovery system for a 500- to thousand cow farm might cost half a million dollars or more. If the committee were to set aside half of the \$23 million, annual funding for anaerobic digestion systems, and provided 25 percent cost share, with a cap of \$125,000 for each system, we would literally have hundreds of installed systems throughout the country four years from now.

The key to commercialization of anaerobic digestion technology is increasing the number of operating systems. It is important to keep the grant size large enough to provide a positive cash flow to the producer, but small enough to encourage a large number of farmers to invest in the technology.

This level of grant support, we believe, would leverage the installation of hundreds of systems throughout the country.

With hundreds of systems, farmers, engineers, and the NRCS will gain extensive experience with anaerobic digestion, existing technological hurdles will be overcome, and the design construction and maintenance of infrastructure will be in place throughout the country to support this market.

This strategy would provide rural economic development opportunities, drive down cost, and stimulate this emerging market to the point of widespread adoption.

You asked about matching funds. If you were to provide 25 percent cost share grants for farm-based systems, anaerobic digestion systems, most farmers will need to spend significant funds on their own in order to install these systems.

Some projects may receive grants or loans from other sources to offset the cost of complementary experimental technologies such as fuel cells, micro turbines, or innovative anaerobic digestion technologies.

Marshaling the resources to provide the remaining 75 percent of the capital costs will be a significant challenge for most farmers. We recommend that no restrictions be placed on the sources of funds that may be used for match. The point here is to get the systems installed to the farmers and for the farmers to have a strong vested interest in their operation and we feel limiting the cost share to 25 percent will accomplish that goal, no matter where the remaining funds come from.

As far as small scale wood heating systems, we're also proposing a portion of the funds be allocated to a program initiative to support the installation of clean burning biomass boilers on farms, ranches, and small businesses in targeted parts of the country.

These clean-burning boilers use locally-supplied wood, either chips or in cordwood form, to replace fossil fuel for space heating and domestic hot water. In the interest of time, I'll refer you to our written testimony. We have a section there on this proposal as well.

I'll close with an example of how significant cost share and small-scale biomass technologies can stimulate an emerging market.

BERC has developed its school wood energy program to be implemented in states around the country based on Vermont's 15-year experience with advanced automated wood chip heating systems in schools.

In Vermont, more than 10 percent of all public school students today are in schools that are fueled with locally-available wood chips, and believe me, we need a lot today. It was very cold up there.

While there are many reasons for this success, one very important factor is the State of Vermont provides 30 percent cost share for local school capital projects, including wood heating plans. Now, Vermont school districts, considering new schools, are building expansions, routinely consider and often implement wood heating as a routine matter.

Thanks to state support, wood chip heating technology has come of age for this market sector. The committee has the opportunity to match the success on a nationwide basis in both methane recovery and the installation of advanced wood heating systems on farms, ranches, and rural small businesses.

By adopting these recommendations you can use Section 9006 of the Farm Bill as a vehicle to provide environmental benefits while creating energy security and economic stability for farm and rural communities throughout the country.

The Biomass Energy Resource Center would be pleased to make our on-the-ground experience in program design and implementation available to the committee in further developing these program concepts, if you have any need for it.

Thank you very much for your time.

MR. AMES: Hello. My name is Jeremy Ames with the Environmental & Energy Study Institute, and we'd like to thank you for the opportunity to speak here today. I'd just like to say it was great to hear the enthusiasm from the panelists for implementing this legislation.

I think you'll find a lot of enthusiasm from the participants today. I see a lot of familiar faces and I think that most of the organizations who are making comments today were very much involved in the crafting of this legislation, and are very committed to seeing that it is successful.

EESI is the Environmental & Energy Study Institute. It is a very small nonprofit. We were started by member of Congress with a goal in mind of putting forward policy ideas that solve environmental and energy problems that we are facing, renewable energy and energy efficiency are very key to our mission, and we were very involved from the early stages in kind of envisioning what an energy title to the Farm Bill might look like.

We were I think very pleased with the result that came out of over a year of work from many of the groups in this room, the Senate Agriculture Committee and the many other stakeholders involved, and we're very pleased that the Rural Business Service has been given the charge of implementing this provision.

To speak just very generally, I'll allow the other groups today to get into the specifics, but just very generally on the questions that you asked us to address today, first of all, which projects should be eligible for funding, and should innovative technologies or more established technologies be given priority?

To that, we can only say that the primary goal should be to select projects that have the best chance of success. But in saying that, Section 9006 is not meant as a research program. I think that Department of Energy and the Agricultural Research Service are best able to really work out the new technological innovations.

I think that the goal of Section 9006 should really be to identify the technologies that are ready for commercialization, are commercialized, and have the best chance of success.

But in saying that, I would also caution that the Rural Business Service not stick to only technologies with which it has a very established track record. USDA and Rural Business Service, Cooperative Service, has done several successful biofuels projects, but RBS has less experience in the areas of, for instance, solar, wind, geothermal and efficiency. These are new areas that are being explored.

So we would encourage that a diversity of projects be funded, that of those technology categories no specific category receives more than 50 percent of the total funding.

As far as what types of assistance are most needed, again, the types of assistance that are best able to make these projects successful, I think that RBS has the best track record to determine, to make those considerations. In evaluating projects, we would encourage you to look at those projects which are best able to use the federal funds to leverage state, local and private financing.

In regards to what factors that RBS should use in determining projects that are eligible, we would say that achieving geographical diversity is a key. We can't stress that enough.

Every region of the country has a different resource base, different state programs, different energy infrastructure, and the program, Section 9006, needs to be flexible enough to take into consideration all those geographic differences.

So, again, a diversity of business models funded, of technologies funded, I think is key.

Then, finally, you asked what existing state and local programs are there to provide matching funding for federal funds.

Currently, 14 states have set up clean energy funds that are paid for by a systems benefit charge on electricity customers. Many of these funds have issued grants and loans to begin projects, and many of those funds are very interested in developing ag-based renewable energy opportunities. In fact about a year ago, the West Penn Power Sustainable Energy Fund sponsored a conference on renewable energy in agriculture which was attended by several hundred people. Many of them were farmers who are saying that this is time, you know, we need to develop these new markets, we're really excited about, you know, going down this path.

So I think that there is tremendous opportunity to combine with some of those efforts that are already underway, with those partnerships that have been forged.

Finally, I would just say that in implementing this, we realize you have a monumental task ahead of you, but we would just urge that you move forward with these rules as soon as possible.

I had the opportunity, several weeks ago, to speak to the Oregon Biofuels Task Force, which is made up of members of the Oregon House and Senate, and the chairman of that group also happened to be chairman of the Oregon Agriculture Committee, and the questions all dealt with, all right, we've got these new federal funds, when will they be ready? and, you know, when can Oregon access these funds.

So, you know, the answer to that was well, you know, we're working on it, we know that USDA has been diligent in implementation, but we need to recognize that many state legislatures are in a budget crunch and they will only meet for a very short amount of time.

So if we want the states to now follow suit and follow the leadership of Congress, we need to provide them guidance in a very timely manner.

So I'll end my remarks there and just wish you luck in this task and encourage you to utilize the resources and knowledge of the people in this room. Thank you.

MR. : Under Secretary Dorr, Deputy Secretary Moseley, members of the panel, thank you for the opportunity to address you on this important subject. My name is Denny Harding [ph] and I am a commodities service coordinator for the Iowa Farm Bureau Federation, and I'm here to speak on behalf of the Iowa Farm Bureau Federation's response to the USDA's request for comments in consideration of Section 9006.

The act allows the department to provide financial assistance for the purchase of renewable energy systems to make energy efficiency improvements. The Iowa Farm Bureau feels that priority should be given to producer-owned energy

projects, and projects that provide benefits to rural communities.

While innovative technologies should receive funding, we believe the proven technologies such as energy production from wind and biomass should receive preference. Loan guarantees, direct loans, grant programs are authorized under this legislation. Since the renewable energy industry is still in its infancy, we believe grants should be made available to educate farmers and other potential investors on the opportunities and challenges of this emerging industry.

Grants can be made available to develop multi-organizational sponsored seminars and workshops conducted on a statewide or regional basis. Grants should also be made available to specific projects for feasibility studies and organizational expenses.

The Iowa Farm Bureau recommends the creation of revolving loan funds to encourage the continuing development of renewable energy incentives. We also recommend the use of loan guarantees to the maximum extent possible for renewable energy projects.

We believe factors outlined in Section 9006 that the Secretary has to take into consideration when determining the amount of a grant or a loan are appropriate. In addition, we feel financial capacity and capability of the applicant to carry out the project should also be consideration. The Act states the combined amount of grant loans made and/or guaranteed should not exceed 50 percent of the cost of the activity funded. The use of loan guarantees within these parameters may not be enough to facilitate project funding, which may necessitate exploring other avenues of financial support.

The Iowa Farm Bureau is interested in partnering with USDA Rural Development to assist in the implementation of 9006 of the Farm Security and Rural Investment Act of 2002.

The mission of the 150,000 member Iowa Farm Bureau is to help farm families prosper and improve the quality of life. Because of this philosophy, we feel that USDA Rural Development's Iowa Farm Bureau Federal Partnership would have a positive impact on producers and rural communities involved in expanding rural and renewable energy systems.

Our partnership could include, in the area of education outreach, as the largest farm organization in Iowa, we are uniquely positioned to support the development of the human infrastructure necessary for the successful implementation of Section 9006. As an example, the Iowa Farm Bureau cooperated with USDA Rural Development, Iowa State University, the Iowa Corn Promotion Board, Iowa Department of Agriculture and Land Stewardship, the Iowa Institute of Cooperatives, and the Iowa Department of Economic

Development in developing and delivering and educational support system for farmers interested in ethanol production.

Over the last several years, twelve educational seminars were held at the Iowa Farm Bureau Conference Center for interested producer groups. Guest speakers covered such topics as business organization, securities law, environmental impact, site evaluation, financing, marketing, federal and state policy issues, and many other important topics.

The information covered at the seminars was compiled in a resource manual which, in essence, served as a pre-feasibility study for those interested in ethanol production.

The manual is now available to the public via the Web site at Iowa State University and we also cooperated with the Iowa Corn Promotion Board, the Iowa Department of Agriculture in the formation of the Iowa Renewable Fuels Association, which is a trade association of producer-owned ethanol facilities in Iowa.

To date, four plants are producing ethanol, and three others are under construction. Over 4,000 farmers have invested in the plants, that will have a total capacity of 187 million gallons a year of ethanol and use approximately 70 million bushels of corn annually.

The Iowa Farm Bureau is currently cooperating with the Soybean Promotion Board on soy diesel marketing development activities. Right now, we have twenty-four informational meetings targeted at fuel dealers and marketers scheduled in the county Farm Bureau offices throughout the state.

The Farm Bureau is also a financial partner in the Sheridan Valley Biomass Project, which is testing the feasibility of burning switchgrass in a coal-fired generating station in southeastern Iowa. The primary funding for this project is from the U.S. Department of Energy and MidAmerican Energy and Alliance Energy are cooperating.

Additional, the Iowa Farm Bureau has hosted several meetings on renewable energy which attracted attendees from several Midwestern states. If Section 9006 could be structured to allow funds for the coordination of education, outreach, and monitoring of Section 9006 activities, we'd be interested in partnering and investing both in direct and in-kind match.

I wanted to step away from the script a little bit. The thing that we did learn, when we cooperated with all these groups, we got a lot more--everybody talks about critical mass, and usually are thinking in terms of capital and financial things. But when we cooperated with all these different groups on the ethanol industry, we got a lot of critical mass and a lot of input from a lot of different

groups before we went too far down the line, and I think that's why this has been successful.

Another area where we could partner would be in the area of financing. The Iowa Farm Bureau is one of the largest private sector investors in producer-owned, value-added agricultural opportunities. We presently have a portfolio of 24 projects representing approximately \$25 million in equity, debt, and debt guarantee investments. These investments include producer-owned ethanol facilities, meat processing plants, marketing and distribution systems, and risk management services.

If Section 9006 could be structured to allow for the financing of grant and revolving loan fund activities on behalf of producer-owned bioenergy facilities and producer-owned energy conservation services, we would be interested in partnering and investing both in direct and in-kind match.

Technology is another area where we could partner. The Iowa Farm Bureau has launched an aggressive technology access and training program in a joint venture with Iowa State University Extension, Lighthouse, and the IFBF. We will be providing low-cost, geographical universal Internet and technology services for Iowa.

If Section 9006 activities are authorized in Iowa, our joint venture could make itself available to USDA to customize the USDA communication, support, and monitoring process for Section 9006 participants.

And, finally, the Iowa Farm Bureau Federation is the largest agricultural producer organization in Iowa. This membership base, coupled with a professional staff, who's experience in education, business development and financial investments could assure Section 9006 success in Iowa if the rules would allow for some form of joint venture between the USDA and the Iowa Farm Bureau.

Thank you very much for allowing us the opportunity to address this topic, and we wish you luck.

MS. AGUILLON: I want to thank the USDA and the panel for the opportunity. My name is Cecilia Aguillon, representing Kyocera Solar, and we make solar portable tank panels. Also, we manufacture water-pumping systems, DC-powered pumping systems, out of our facility in Scottsdale, Arizona. I'm basically here representing not only Kyocera, but also the hundreds of dealers that we have throughout the U.S. that service the farming community.

What I'm going to present to you are statements that show how the portable tank energy is helping, and these are real cases. So do we start?



I don't need to tell you how great portable tank is. It's low maintenance, clean, [inaudible] fuel. Many of us are familiar with it.

Right now, the farming community, as you know, has problems with not only energy, but also with water because of the drought. So the alternative to have right now is generators, and the disadvantage of the generators are that they are very difficult to replace. They are very dirty, you know, just contaminate the air, and it can have spills. Over the lifetime of the generator you have to be maintaining it. So it's very costly.

The other alternative to have is windmills. Actually, one of the things that we're hearing from a lot of farms in Texas and Oregon is that they're trying to replace their windmills because they're finding it very expensive to replace blades, to maintain them. And just to install them, you have to erect a tower, and compared to solar, where you only need a crew of maybe one person or four people to install solar panels, they're asking more and more questions about solar so they can replace the windmills.

In terms of helping the community with the water issues, we have water-pumping systems that are being installed now in the U.S. The market is approximately 600 per month that farmers are acquiring, and these are for different kinds of wealth, different debts, and they don't need any fuel. They work with one panel sometimes or they work with several panels [inaudible] depending on their application. Some of the farmers, actually, who own cattle would take a system with one or two panels and just put it in their pickup truck and move it around wherever the cattle is, and instead of using batteries, they will use a tank to hold the water, to keep it there.

This is an example of a water-pumping system that's being used right now in Prescott, Arizona. As you can see, there are no moving parts, so there is really no maintenance to the solar system. If you have a tracker, then you may have some maintenance, but it's very minimum.

Then, you see the storage tank. That's instead of the battery. Another thing that helps to use the storage tank with is the issue of conservation. Right now the farmer is very encouraged to conserve water because of the drought. So by using the tank, they know that at nighttime, they will not have the sun to provide the energy, so they are less likely to waste water, and they're more likely to conserve, so it's an incentive.

This is another example of a water-pumping system that is used in Argentina, but it's for cattle. As you can see, it doesn't have any other fuels or anything like that, other than the solar panel, to power it.

Then, for irrigation, which is also very important, we not only work with solar panels to pump water out of the well to irrigate, but we also work with solar panels to provide energy to control irrigation-control systems.

There are several companies--I was at an irrigation show about a month ago in New Orleans--I was overwhelmed to see how many U.S. companies there are working in irrigation or coming to us, asking us for different applications for the solar panels because, as you know, in the rural areas, if you are two miles away from the grid, just to get power to you, it will cost you about \$40,000 just for that. With \$40,000, you can power a whole house in a state like California.

That's just an up close what it looks like, the water going into the tank to hold, and the solar panel. This is an application that is also for cattle, as you can see, that they are [inaudible] close, to prevent the cattle from shaking the panel or ruining it.

Solar is also used for providing not only water, but also electricity for the remote locations. In Texas and California, they use it a lot for storing, storing locations, because the farmers keep a lot of expensive equipment on their farms, and they want to have an alarm system, a security system, and the solar provides the best, most cost-effective solution. Also, it provides basic electricity, really, for the home. It provides ventilation and security lighting.

One of the things is that in states like California, for example, where a \$20,000 system would power a small home or a barn, the payback is actually about four years, four to ten years maybe, in a much larger system, but that is because California has a very good rebate program. So that's a state to consider for funding.

Then, we also have an area lighting system, which are also very important at nighttime, where you can get energy.

In very remote locations, we also work with solar-powered freezers. In the Third World countries, they're used to store vaccines, but also in the ranches they're used for just to conserve produce or meats.

Right now, worldwide, we have installed several systems. In Brazil, we have installed about 2,000. These are actually water-pumping systems. We do work with hybrids. In some places where the rancher has already spent the money on the windmill, and the windmill is working, but they still need extra power or they want to add this to the system, you know, solar is compatible with wind. You can do that.

Another thing that's good with solar, too, is that sometimes if the farmer only has a certain amount of money to utilize

for that system, later on they can't keep adding to it, so there is an opportunity to grow with it.

In Argentina, we have about 500 systems that we've installed this year. Over 100 systems have been installed in Mexico, and actually the Mexican Government prefers the higher priced pumping systems that last about 25 years on the ground. All you have to do is just throw the pump in there, put the panel in, and you don't ever have to maintain it or see it again.

There are other systems that are much cheaper. A pumping system will cost anywhere from \$1,200, if you have the small one, to about \$20,000, if you want to have it used for irrigation. Sometimes in Brazil and Argentina, for example, they used them for a whole village, to bring water to a village, and that's about \$25,000 to \$30,000 system.

We have installed about 250 systems in Australia, and that is from January of this year. The pumping system in Australia is beginning as we speak today, so they're taking advantage of what the solar-powered portable tank is doing for them.

Again, the U.S. farmers are facing drought conditions and energy crisis. A lot of them are complaining about black-outs and brown-outs, which are not only convenient, but expensive because, in a black-out, after the black-out is over, they have to come back and have to reset all of the clocks, they have to go and make sure that nothing was taken, that the cattle didn't escape. There's a lot of things that they need to do to get life back going again, and they really don't want to be dealing with these kind of inconveniences.

The solar-power alternative helps them with back-up systems, with basic electricity, the water-heating pump system, irrigation control, as I said before, electric gate openers, solar security. So it really offers a very cost-effective alternative to their energy problems.

The map shows how many of our dealers are working in the different states. You can see California is where we have most of our dealers, almost 300 dealers there, and the reason is that California has like one of the best incentives in the country. You get a 50-percent subsidy, and you can tell that--you can even see in states that are not even considered solar the green-shaded states, they are also taking advantage of solar systems, even though they don't get half as much sun as California and Texas.

Thank you very much, again.

MR. KRIEG: Good morning. My name is Ingo Krieg [ph]. It's certainly a pleasure or honor to be here to help solve the country's growing energy needs.

This editorial was in the paper in Jacksonville last week, and it reminded me of an earlier editorial five years ago, but I really liked it because, I mean, if you can read it, it's kind of funny that the pollution that, it used to be that farmers created all of the pollution. Well, I guess energy plants did, too, but now we can kill ourselves with our energy sources.

This is the one I saved five years ago in 1997. When I first started to design a new dairy, I thought, to me, the thought I had was trying to really build an Epcot of a dairy, a futuristic, but I really like that cartoon and pass it on to other people.

I have all of my cartoons up front, I'm sorry, but this one I woke up at 4 o'clock this morning, and I came up with, you know, really, odor is really in the nose of the sniffer, and if anybody knows about cows, cows really don't like manure. They'll eat around a pile. The horses will eat where the cows and the cows will eat where the horses, so, but it's still a great cartoon and was very relevant. I just happened to pass it along.

I'm going to give you a tour of Florida or my farm. It's in Jackson, like I say. We're on the outskirts, 15 miles from downtown. Like I say, this facility is two years old. I started designing them. I'm a little bit of a design engineer, too, but it's a 3,000-cow facility. We've only been in the facility about two years now, but it's really done well for us. It handles cows. It does a great job.

Two years ago, well, the DEP loves us, they gave us an environmental award for industry, which is kind of unusual for really a large farm like this to get an environmental award. They're usually going to, you know, paper mills or this and that. I spent, this is my own money that I, actually, it was MetLife money that I spent mortgaging the property.

Then, in 2001, they gave an environmental award to myself. Those aren't Canadian geese there, but they are ducks, and those ducks are heading East, not South. From what James Moseley was saying earlier, that we all have a direction, but I guess I scared them when I took the photo.

In the far background, you'll see a Winn-Dixie warehouse. You can barely see it. We have a lot of big industrial neighbors. This is a shot of my barns, part of the barns. All of our roof water is caught in these ponds. We followed NRSC guidelines. I mean, it's all environmentally correct. It's really nice.

That's just another shot of the same thing, the barns. There are six barns, actually. Each barn can hold 500 cows. That's max. Preferably, they really only hold 400 cows, 2,400 cows in the facility, but we have stocked these ponds with Gambusia minnows, and normal other fish. What I was

trying to do, I mentioned earlier about this Epcot and Disney World-type thing, I really wanted to put together an operation that was Disney clean. We're real close to Jacksonville, and we have all of these schools, and we do have a viewing area upstairs.

But my theory was that when Walt Disney built down in Orlando, he wanted to fight the mosquitoes biologically by putting in ponds and not spraying with all of the tourists out there. So I designed this facility with nice, freshwater ponds, and then I stocked them with Gambusia minnows, and then other fish eat those minnows, and then we have some bass. I had fish people put them in for me, so I don't know the--I know we have some specs and some bass, but it's really nice.

This is where the cows eat. Like I said, there's anywhere from 200 to 250 cows on the side. They're very happy from the Florida sun. They've got fans blowing on them. We use a bed-pack system that I'll show you in a little bit. That feed right there is alfalfa hay that we bring in by rail from Idaho. We mix it with some corn silage that is grown on a farm. It's Nutri-Turf. It's a division of Anheuser-Busch. They take their wastewater and grow a silage crop for me. I got them to do that.

They were having problems growing turf grass because the turf grass was only, you know, like an inch high or so, so I advised them that if they grew a taller plant that would have more nutrient uptake, then they could ship that crop to my cows, and we would get rid of their nutrient problems, and I'd make milk, and then we'd go ahead and compost that, and put it on the side of the road, and it's worked out in some ways, but the milk prices are so low it's very difficult.

That's some of the brewers grain from the brewery, along with there's a silage crop that I also get from them that we mix with the alfalfa and all of the other goodies that we get. That's the nice thing about cows. People can't eat citrus pulp, they can't cotton seed hulls, they can't eat whole cotton seed, and all of these ingredients are mixed together, and we make milk.

This is part of the bed-pack system where the cows sleep. It's a little blurry. They sleep on the right, they eat on the left. The barns are actually 134 feet wide. It looks a little narrow there, but it's really roomy. It's 60-percent silage. For fertilizer value, I put in .5-percent nitrogen.

That's the alleys where they stand and eat. So that is a messier area right there. That's really probably where a lot of your methane is, and there's the analysis of all of that when we've had it done. I've been having a methane analysis done, and methane is a Phase 2 in my operation. We were just trying to milk cows initially, but it's coming along, hopefully.

This is where we milk our cows. It's a double 32 rapid exit. I don't know if you're familiar with any of those systems, but it's a Westfalia. It's everything. The cow walks in, automatic ID, just like the grocery store. We milk three times a day. Her milk weights are recorded three times a day. We work very closely with the University of Florida Vet School. They come out once a week. We have students that live on the farm. We have some apartments there, right there on the facility.

This is where we store our milk. There's three tanks there. There's 36,000 gallons of storage. It's a lot of storage, but when you're in Florida, it's not like you have a cheese plant down the road, but one thing we do have sometimes is we do have hurricanes, and I thought, well, I want to store my milk. If I'm milking a lot of cows, we'll put it in the tanks.

This is a solid separator in the back of the farm. It's very environmentally friendly. We use very little water because of the bed-pack system. So it's powerful stuff. There's a pump house in the back, a [inaudible] generator.

That's a shot over the lagoon. We don't use much water. We don't have a lot of storage. It's only a half-acre, and then it goes out to the irrigation fields.

This is a digester down at the University of Florida. I took a picture of that. Like I say, I'm also working with them, Dr. Anne Wilke, and I'm also working with Jacksonville Electric Authority. We're moving forward. We have actually some new technology that we're working on that we can move on into not just our operation, we want to actually not supply our own energy needs, but we feel like we can do a lot of energy needs way beyond what our needs are, 10 to 40 megawatts.

This is JEA. They're on the back side of me. I mean, we're neighbors. My farm is right in the back. You can see it in the back.

And, again, the farm is in the back there. This road leads down to the power station, and that's where it goes.

There's the farm in the back. There's Rails to Trails is on the back side of my property, and so we do every weekend we've got these bikers biking down, and there's really no odor because we're on a bed-pack, and we compost.

That's the bike trail.

That's the farm. That's the power station.

This is the Winn-Dixie Supermarket, 1.2 million square feet. They are a food distribution. We're all happy neighbors.

Thank you.

MR. WEIR: Good morning. My name is Bubba Weir. I'm with the Mississippi Alternative Energy Enterprise Program, and I know what you're thinking--how can a guy with a name Bubba from Mississippi know anything about renewable energy. Well, let me give you a state and local perspective.

First of all, let me give you a little bit about my background. I've been in the economic development profession for 15 years. I worked for a U.S. Congressman for five years in the District as an economic development liaison, and for the past five years, I've been involved in bio-based products and bioenergy initiatives in the State of Mississippi.

I'm currently working with the Mississippi Technology Alliance, formerly working with the USDA Alternative Agriculture Research Commercialization Corporation. We had a partnership with them. The State of Mississippi did. Currently, the State of Mississippi, this last legislative session issued a little over \$8 million for alternative energy projects. You heard earlier about the systems of benefit charges, but our state has decided to not assess those systems benefit charges, but instead to invest by using bond funds.

I'm going to tell you a little bit about our program. We have, currently, an RFP out on the street. We're looking for partners for projects to fund. There's a brochure in the very back. If you're interested in contacting us, we'd be interested in talking to you.

I want to try to answer the questions that you posed to us, and I'm going to try to use an acronym--TIP--to help answer those questions.

First of all, what projects should be funded? Well, if you use the letter "T," talking about technology, and you look at the technology life cycle, we would like to encourage you to look at projects that begin not at basic R&D-type projects, but instead at applied technology, product development, and commercialization.

This last summer we conducted a series of farmer focus group meetings around the State of Mississippi, and we heard from farmers practical applications for alternative or renewable energy and how they also would like to be involved in it from an enterprise standpoint.

I can tell you that there is a need to help build capacity with small businesses that want to be in this business. You're going to need to help provide funds for everything from start-up companies that maybe want to help proliferate things like solar equipment, as well as companies that would like to produce ethanol, biodiesel, methane digesters, microturbines, other types of technologies.

Let me also say that I noticed in the regs that were written, the way the law was written, it did not use, well, it talked about the energy savings, it talked about environmental benefits, but from our perspective, in the State of Mississippi, we're looking at this as an economic development tool. There's not necessarily going to be an energy cost savings initially. It could be long term before you actually see an energy cost savings.

So you have to look at this as, you know, how can we benefit the farmers, how can we benefit small businesses, how can we benefit residents, as well as how can these possibly be economic development tools. That's technology, "T."

The next letter I'd like to use, "I," for investment. What types of financial investment should be made? Well, first of all, let me suggest that you take a long-term perspective on this. Let me encourage you to look at things like equity investment. I know that's a dirty word sometimes when you talk about government dollars, but you're not talking about projects that are necessarily going to cash flow and start being able to pay back loans initially.

I can tell you, from working with farmers in the State of Mississippi, the number one issue for them, other than the health of their livestock or their family, is cash flow. So you're going to need to look at how can we make, possibly, for example, zero-interest loans on projects like this? We'd like to encourage you to look at programs like the intermediary relending program, folks like us that are at the grassroots level that possibly know the types of projects that could be successful in our states, and I mentioned equity financing.

So zero-interest loans, intermediary relending programs and equity investments are the types of long-term perspectives we'd like for you to consider. Also, what sources of match should be considered. We think you need to be creative when you're considering match. You heard about systems benefit charges or public benefit funds. Again, in the State of Mississippi, we've chosen to use bonds. Those can be done at the state or local level.

Consider in-kind matches. I know a lot of programs say, you know, when you have a match, we don't want to consider in-kind, but you have universities, you have lots of federal programs and state programs that are very familiar with documenting and keeping up with in-kind, and I think you ought to consider it just as you would cash or any other type of match.

I'm not that familiar with carbon credits, but I know that that's something that's being talked about. I'd like to hear how possibly carbon credits could be used as a match, and other federal sources of funds. Again, lots of times federal programs will say we're not going to allow other



federal funds to be used as a match, but let me encourage you to do that, particularly in a state like Mississippi and some of these rural states. Sometimes federal funds are our best sources of match.

The next letter I'd like for you to consider is what other factors to be considered? Partnerships. I think partnerships is key.

First of all, let me thank our State Rural Development Director, Nick Walters, for inviting me to this meeting today. Without him, I wouldn't have known about it. But partnerships between RDA and the Natural Resource Conservation Service, the Farm Services Administration, DOE and EPA regional offices. We've, also, in the State of Mississippi, partnered with Native Americans, our tribe in the State of Mississippi, TDA, the Forestry Service, other folks that are involved in rural development in our state.

But let me also encourage you, one question that you do ask, should any preference be given? I'm going to be selfish and ask, yes. I think an area like the Delta Regional Authority should be considered for preference. It's a start-up organization similar to the Appalachian Regional Commission and a rural area encompassing about seven states in our heartland.

Another partnership that you need to consider needs to be at the table, and I'm sure that it's involved behind the scenes, is the Agricultural Research Service. They're very much involved in technology transfer, as well as the Cooperative Extension Service, and have helped us in our state in looking at the types of technology that's out there that's on the verge of potentially being commercialized.

So what kind of consideration should be given? I think you need to have partnerships that involve government, academia, and the private sector. That's what we're doing in the State of Mississippi, and I think we're going to be successful.

You talked about cooperatives, co-ops. I think those are very important. We work very closely with Farm Bureau, and we even involve in our efforts electric companies. We have a Steering Committee made up of representatives around the state, and we have electric companies and others that are involved in that.

So, in conclusion, let me echo a comment that was made by Under Secretary Dorr. Please, let's not be bureaucratic in how we approach this program. On a lighter note, I think Section 9006 needs to be renamed or needs a mascot or something, and I wouldn't mind you calling it the Bio-Bubba Section. I think that would be a great name.

[Laughter.]

MR. WEIR: Thank you.

MR. TALBERT: Good morning. I'm Gerald Talbert. I'm a consultant here representing the National Association of Conservation Districts.

The National Association of Conservation Districts has been promoting the opportunities that bioenergy and greenhouse gas reduction can provide to American agriculture since 1993. Through America's 3,000 conservation districts whose jurisdictions cover nearly every acre in the nation, we provide a local gateway through which technical and financial assistance is made available to private landowners to develop and implement plans to protect their natural resources and working lands.

With their federal and state partners, we form a conservation delivery system to help move national conservation initiatives through the state and local levels to put conservation on the land and to transmit information from one level to another.

NACD supports bioenergy because it provides both environmental and public benefits. The combustion of biomass replenishes the current carbon cycle by returning the carbon dioxide it had removed from the atmosphere during its growth cycle.

Consequently, the replacement of fossil fuel with bioenergy reduces the excess carbon dioxide that the combustion of fossil fuel creates, which exasperates our growing global climate change problems. Methane capture and conversion to electricity results in a direct and substantial reduction of a greenhouse gas that is 21 times more potent than carbon dioxide, a reduction that can be easily and accurately measured in cubic feet.

Conservation districts have been working directly with private landowners for over 60 years. They know that a voluntary, incentive-driven approach is one most favored by, and effective for, farmers. The financial incentives offered through cost-share payments for conservation practices and rental or easement payments for land retirement programs help farmers cover the cost of implementing--

MR. TALBERT: [Continuing.] The energy title of the 2002 farm bill is a tremendous step forward for the agricultural community to seek its full potential to provide a sustainable foundation of domestic renewable energy. Section 9006 provides a new and substantial funding source for individual farmers, ranchers and small rural businesses to invest in renewable energy or to improve the energy efficiency of their operations.

In most cases, producing bioenergy feedstock either through traditional crops or biocrops can be done with resulting

improvements to soil, water and air quality, collecting and containing animal waste to capture and convert methane to electricity is also a practice that protects water quality.

Animal waste that has gone through an anaerobic digester becomes more effective organic fertilizer. And to the extent that its application would replace commercial fertilizers, a tremendous amount of energy is saved, and a reduction of nitrous oxide is achieved, the greenhouse gas that is 310 times more potent than carbon dioxide.

NACD believes that the financial assistance provided in Section 9006 should be used for the following renewable energy systems and energy efficiency improvements on either an individual farm or a regional facility:

Methane capture and conversion to electricity, biomass gas suppliers, wind power, photovoltaic power, geothermal power, hydrogen fuel cells, and converting to more efficient irrigation systems and converting to no-till planting.

Priority for grants and loans should be given to methane capture equipment because of the high cost of establishing the system and the multiple environmental benefits it provides.

In energy efficiency improvements, priority should be assigned to converting to more efficient irrigation systems and to no-till planting because of the additional benefits achieved, the tremendous amount of water that would be saved, as well as energy, with more efficient irrigation systems, and the soil, water and air quality improvements, as well as the reduction of energy required to use a no-till planting system.

In addition to obvious factors to consider when determining grant or loan applications, one factor should credit efforts within a community of a group of individual farmers who wish to establish a cooperative to build and operate a bioenergy system for which they would provide the feedstock.

Preference should also be given to applications from states that have established programs to promote bioenergy from agricultural sources if federal and state incentives can be combined.

Other federal incentive programs that may be supportive of Section 9006 incentives include: the Environmental Quality Incentives Program, the Conservation Security Program, Agricultural Management Assistance Program, Farmland Protection Program, Great Lakes Basin Program for Soil Erosion and Sediment Control, and the Conservation Corridor Program.

The energy title would hopefully accelerate a nationwide process to maximize our ability to provide our own energy. It's a great opportunity for American agriculture to be the keystone in the foundation of national energy security.

Thank you.

MR. HOLMBERG: I want to thank the panel very much for your spirited support for biorefinery concepts. I'm particularly pleased to see Denise Swink here, who has been a real pioneer in terms of bio-based products. We thank you.

Keith Collins probably remembers that back in 1978, the early '80s, that the Department of Agriculture was in opposition to ethanol. You've all come a long way, and thank you very much.

My name is Bill Holmberg. I'm chairman of the New Uses Council, which is dedicated to new ag and forestry crops and new uses for all ag and forestry crops and residues, as well as a clean biomass heading for dumps and landfills, to the production of biofuels, bioelectricity and co-generated thermal electricity, and thermal electricity, and chemicals including lubricants, paints, solvents, adhesives, ink, cleaners, et cetera.

American agriculture is superbly positioned to address several of America's major concerns:

National energy and homeland security through dispersed renewable energy facilities; the need for new basic industries and quality jobs; preservation of the family farm concept; dealing with farm subsidies administered by separate governments, with powerful negative impacts on nations unable to afford such subsidies; better protection of forest and woodlands from unwanted fires; urban road and highway encroachment on farm, grazing and forested lands, loss to wildlife and their habitat; and environmental degradation and the need for America to show a way to profitable greenhouse gas stabilization with limited government intervention.

What follows are the broad-based goals of the New Uses Council. We haven't addressed the specifics outlined and the guidance provided by Under Secretary Dorr, but trust that identifying major areas of importance will be helpful. They are:

Need to accelerate bridge building with a broad spectrum of environmental organizations. Too often most of their opposition to biofuels, biopower and bio-based products are rooted in old animosities. These animosities go back to the very beginning of the ethanol industry in the late '70s/early '80s, misinformation and exaggerated concerns about the environmental impacts of the carbohydrate economy; Government should convince the world's major auto-truck manufacturers to recommend renewable fuel--bioethanol, biodiesel, and other biofuels for use in all of their vehicles;

Establishing a positive relationship between existing corn and soybeans to ethanol and biodiesel industries and proponents of cellulosic biomass and wastestream biodiesel as preferred feedstock. There's too much animosity there. There's not enough cooperation. It's wasting a lot of resources, and it's causing consternation and concern within the environmental community. Those organizations have to work together.

Extending the new uses concept beyond crops and residues to new uses of farming, grazing and forestry land, there are three opportunities:

Make these lands available to hunters, fishermen, and others seeking outdoor adventures, following procedures profitable to landowners, while habitat for wildlife and fish, the environment, and the soil are enhanced.

Farm, grazing and forestry land, if worked in a sustainable and environmental enforcing manner, will sequester and store carbon and reduced methane and CO2 emissions by limiting biomass degradation through microbial action. This will benefit landowners by marketing carbon credits;

Sharing lands with wind farms, solar energy arrays, geothermal wells and incremental hydro when landowners and the environment, as well as wildlife, fish, and their habitat are enhanced, balancing the need for economies of scale, with the benefits of economies of integration and value.

Integrated farm energy and fuel systems will help meet these goals. By integrating an ethanol plant with a feed yard with an anaerobic digester and a system to process the digestate into biological fertilizers, allows you, for example, to bring an ethanol plant from 40 million gallons, as sort of a minimize size, down to 15 million gallons, and integrating the system entirely allows you these economies of integration and economies of value.

The current energy industry in the United States is driven by fossil fuels, and that has a massive footprint on our economy, our foreign policy, our national policy, and the environment. We're in the transition stage right now, advancing with the renewable energy technologies and bio-based system.

That transition has to proceed with great caution and care. There's got to be a lot of cooperation between the fossil industries and the renewable energy industries, and the government has to play a key role in making sure that that transition moves forward in a way that benefits society entirely. We just can't jerk the system around. It has to go through with considerable ease and decorum.

If we do all of these things right, we're going to create a major miracle within the rural sector. We need this miracle

to effectively deal with worldwide agricultural subsidies for the benefit of American farmers and ranchers, to bring young Americans back into the agriculture and forestry sectors by providing the financial and spiritual [inaudible] that are attractive to many young people, generate new basic industries and quality jobs, position farm, grazing and forestry lands to provide meaningful recreation and learning experiences for people who have more time and money because of continually advancing science and technology, promote friendly and legitimate competition, while benefiting the nation and its environment, and opening markets for the full range of bio-based products, gain the support of the environmental community for biorefinery and carbohydrate concepts, and work cooperatively with oil, gas, coal and nuclear industries in a timely transition from the hydrocarbon- to the bio-based economy.

The New Uses Council is dedicated to those basic goals, and we encourage the government to be more enthusiastic than we are in this process.

Thank you.

MR. : Mr. Holmberg, I'd just like to comment you're the first one today who's talked about the need to bring young people back into rural America, and I appreciate that.

MR. : Good morning, Mr. Under Secretary, members of the panel, attendees. It's good to be here this morning. I applaud the panel for being able to sit in as long as you have this morning. We'll try to keep this short and to the point.

We've had plenty of discussion already today about ethanol and bioenergy, renewable fuels, those types of things, so I don't think I want to belabor that point too strongly this morning.

I'm from the Renewable Fuels Association. We're the national trade association for ethanol. We're the spokesperson here in D.C. Currently, we have 69 facilities across the country. 2.7 billion gallons of ethanol are produced currently on an annual basis. What that means, with regard to transportation fuels, is gasoline makes up about 125 billion gallons of our transportation fuels today.

We're just a small portion of that 2.7 billion gallons, and we are without question, the most successful alternative renewable fuel that's available today. So that just kind of puts things in perspective about where we're at as an industry and where we're at with regard to renewable fuels.

The fastest-growing segment of our industry is very specifically the farmer-owned facility. Of those 69 facilities that we have, 31 are owned by farmers. That's about 45 percent of our industry at this point. Of those

69, we have 9 additional facilities that are under construction, and 6 of those 9 are also farmer-owned facilities. So the trend is moving towards more and more to be a farmer-owned facility.

The reason why we are specifically interested in Section 9006 is because, as we focus programs on trying to help farmers and rural businesses move forward, this is the type of a program that we think could actually be very useful in helping those farmers and those farmer-owned facilities and those ethanol facilities be successful in business.

One of the reasons why rural businesses and rural biorefineries are not successful is simply because it costs too much money to produce the product, and if there's a way that we can continue to lower those costs across the board, then we will continue to have success.

Just as an example, back in 1986, USDA Office of Energy filed a report that said that it would cost about \$2.11 to produce a gallon of ethanol in 1995. Obviously, they were predicting into the future what it was going to be like. In 1995, we were at about \$1.15 or so a gallon for the cost of that ethanol. Now we're down to about 95 to \$1.10 a gallon on making ethanol. So we're getting better, and we're getting more energy efficient as we move forward as well.

On the energy efficiency side of things, USDA also has studied that issue specifically about ethanol and has said that we have a 34-percent net energy gain. Argonne National Laboratory has also studied that issue, and for 100 BTUs of energy it takes to produce ethanol, we get 135 BTUs of energy on the outside of that. So we are at a point that we're productive, we're energy efficient, and we think that we have a lot of successes ahead of us.

One of the interesting things about USDA Section 9006 and ethanol is the fact that we get to tie in this economic development part of things as well.

If you take a look at the impact of what a small rural business like an ethanol facility does to assist with rural economic development, we're in a situation where a single 40-million-gallon facility, and we've had this issue studied as well, just to take a look at what is the impact, what is the impact going to be--for a local community, a one-time boost of about \$140 million, when you build an ethanol facility.

An ethanol facility, a 40-million-gallon facility costs about \$60 million. I mean, it's not a small investment. It's a big project. It creates 40 full-time jobs in that community, about 700 throughout the entire economy. In addition to that, it adds the local price of corn, and what we've done in the analysis that we've completed, is we did an analysis of the cost and the price of cost within a 5-mile radius out to a 50-mile radius, and the increase in the

price of corn in that region increased anywhere from 5 to 10 cents per bushel, so we do have a big impact on the local community.

With regard to Section 9006, specifically, and Mr. Dorr, you suggested and have highlighted for us a series of questions that you'd like us to respond to. I'm not going to respond to those specific questions today, but will do so in writing.

But with regard to Section 9006, we have an opportunity in this section to take a look at what is a renewable energy system. Well, an ethanol facility is actually a renewable energy system. They are one of the few systems that actually process renewable resources into energy. And you can take a look at the whole big picture or you can take a look at some of the smaller parts of that picture as well, and so what we're asking in this process today, as part of our public comments, is as you draft the rules and as you move forward, obviously, we are willing to work with you in doing that, but in addition to that, take a look and continue to keep an open mind about that ethanol facility. As a rural business, it's very important to the economy. In addition to that, it is that renewable energy system.

And then, finally, with regard to efficiency improvements on energy, one of the things that we are interested in, as an industry, are those types of programs that when you take a look at them, you can eventually implement them as part of your rural business and, hopefully, benefit the community that you're working in and that also add to your bottom line as well.

I'm going to talk just briefly about carbon credits and trading of emissions, emissions trading and whatnot. There is a way, currently, that we can develop a baseline for greenhouse gas emissions tradings and those types of things. We have looked at it generally. It's kind of one of those issues that we don't understand. Well, a lot of folks in agriculture don't understand.

But as we move forward, there's a way to benefit from that, and as ethanol producers, and as energy producers, we have an opportunity to take advantage of some of those types of programs as well. If this program could assist the ethanol industry and those farms and those small rural businesses in making better decisions and being a bit more proactive on taking advantage of some of those other things that are available, then this is the type of a program that possibly could be useful in doing that as well.

So I will conclude my comments with that. If you have any questions, we'll take them; if not, we will submit written comments on the different questions you asked as well.

Thank you.



MR. HESTER: Good morning. Thank you. I'm very pleased to be here this morning. I'm Steve Hester, the technical director of the Solar Electric Power Association. The Solar Electric Power Association is a Washington, D.C.-based organization formed in 1992. I wanted to outline some of the opportunities that we see with photovoltaic, Solar Electric and the Rural Business-Cooperative Service.

We were formed in 1992. We have right now about 60 members that are utilities--electric service providers. We have about 40 that are PV industry and stakeholders. Of those electric service providers, most of them are independent utilities, independent-owned utilities, and municipals, but we're very proud to have eight rural co-ops be part of those memberships, and the NRECA.

One of the reasons that's a small number is because there's not a whole lot of the rural co-ops that are really involved in photovoltaics, and that's why I look at this as an opportunity today to get them involved in photovoltaics.

PV is very high cost, about \$6,000 to \$9,000 a kilowatt. That's about twice to three times the price of conventional generation. There is a lack of long-term financing available for it for mostly utilities and its customers. There's a lack of experience and knowledge about what it really does and how it works, and there's a lack of an infrastructure to supply and to service that commodity.

We think that, obviously, the Section 9006 of the bill will give us a great opportunity to satisfy some of those things. A simple off-grid system is very simple. It has a PV array made up of PV modules or some kind of a load controller in the middle. There's a battery storage on the bottom or it could be water, as has been shown before by Cecilia from Kyocera, and it supplies the DC loads. That could be pumping, that could be your house, that could be an inverter, et cetera.

There's a lot of examples of rural PV that's been used around the world. These are all in the United States, predominantly in Texas. You can see it for water pumping. You can see it running an actual house. This one here has a warehouse and a facility that runs the barn and all of that.

This is the most conventional. It uses water pumping. It has a simple in-ground pump. It uses the PV array to supply the water in a water storage tank, and the water storage is used for livestock watering, and it's very successful around the United States. There's some rough costs. If a line extension would have been used, it would have cost \$3,200. The PV system was \$2,300. Obviously, a low-cost solution, and the utility there did that, the co-op.

Here's another one that's also in Texas. Two solar panels keeps the whole going. The line extension was a long ways away. This is where the cattle were, and this is where the

water was, and the PV system was a mere price of that-- \$2,400, a big county electric co-op down in Texas.

Here's one that provides power for a house, and you'll notice that most people in rural communities don't put their houses out in the middle of the sun. They usually have protective trees, and so this one, the PV array is out in the sun, and they have power batteries to store the energy, and an inverter, and in some cases they have an alternative fuel, usually propane generated, for backup for those cloudy conditions or lousy months with a lot of rain.

PV-powered residents are common. Here's one in Florida. It runs the Disney wilderness preserve, a complete facility. It has dorms in there. It keeps the refrigerators and all of the computers they use running.

A lot of residential houses around the United States, some line-connected, some of them are remote. We're using storage usually with batteries.

This company in Texas, CSG Services, and they have focused on Texas co-ops, and they've been very successful to get a Texas PV coalition. They have workshops and training across the state, and they've been able to put about 65 PV systems in, supported by the co-op leader, instead of line extension, usually. So the co-op decided to put this PV system in and not drag the wires out and impose the cost on the rest of the ratepayers, of course.

Some of their systems, and they do have a website.

So they conduct training workshops. This seems to be one of the most successful parts of the whole thing is you have to really convince not only the farmers, but you have to convince the co-op management that there is an opportunity for photovoltaics, that it really can service the loads that were conventionally used with convenient line extensions, which are, unfortunately, a lot of expense.

There's also an opportunity for rural co-ops to actually take down some of the lines and not have to repair them after ice storms, not have to keep the aging poles going, and the line conductors reconnected, by putting a PV system in for a new load that comes in; a new house, new water pumping, et cetera.

Why get involved? Well, it's a great thing to do. The community looks at this as very promising. The image of the utility becomes differently looked at by the customers, and by their, you know, the rural co-op is the customer, so they really [inaudible] have that company do that.

We urge the U.S. Department of Agriculture and the Renewable Business System to develop a collaborative education outreach program. It should be PV-focused worksheets, work on fact sheets, come out with some calculations on how much

line extensions cost compared to a PV system to create some long-term financing for co-ops and their customers.

That's the highest need is just the education, which can be grants, the long-term financing can be the 25-percent/50-percent match, and another thing is we'd like to see that there be a listing of photovoltaic system components, and we're willing to help with that with our rural utility services in the U.S.

Thank you. I think there's a lot of opportunity. For more information on photovoltaics, we have a website, SolarElectricPower.org, and we can show you performance and pictures and how these things really work.

Thank you. I think there's a great opportunity here. We hope that the farm bill will provide some opportunity to get photovoltaics, another other renewable, into the system. It isn't the only solution, but it is one of the solutions.

Thank you.

MR. MURCHIE: Good morning, everyone. My name is Colin Murchie. I'm from the Solar Energy Industries Association, here to provide the one-two punch for solar, apparently. I have a PowerPoint on the CDR there.

The Solar Energy Industries Association is the national trade association representing manufacturers, installers, contractors and operators of solar energy systems, and we're here because we believe that Section 9006 represents a very unique opportunity to achieve all of the well-known national security, environmental, and grid security benefits of solar energy through a focus on the Department of Agriculture's traditionally served population, the farmer.

I'd like to bring some people perhaps into the 21st Century with their concept of solar energy. A lot of people have a very 1975, Jimmy Carter era, conception of solar energy. I don't because I wasn't alive in 1975.

However, you can see here, the solar energy industry is growing at an extremely rapid rate. We've had 25 to 40 percent annual growth rates recently and as we can see, there's an exponential increase in the number of installed systems. Next slide, please.

Since the solar systems are one of two things, either a solar hot water system which is essentially a piece of plumbing, it requires essentially high school metal shop technology, or a solar photovoltaic panel which is just pieces of doped silicon, which reminds you of their very close cousins, the light-emitting diode and the semiconductor.

Right now, in this suit somewhere, I probably have about six microprocessors and three LEDs. I wouldn't have had any a couple years ago before the cellphones and the PDAs.

So since the market is similar, the materials are similar, and the production method are similar, solar's been able to ride the curve of descending costs being set up with these technologies. Next slide, please.

As you can see, over the past 25 years we have an extremely reliable TARAK [ph] record of reducing in price at approximately 9 percent per year, every year since 1976. Through the miracle of compound interest, which our economists are painfully familiar with, that brings us down to one-tenth of 1976 solar prices and one-third of 1990 prices.

This sort of market and that sort of incredible cost reduction potential has brought a lot of large players into the room. I won't name names but certainly some of the people making solar panels today made a lot of the cellphones in this room and filled up the tanks on a lot of the SUVs out on Independence Avenue. Next slide, please.

We have a very reliable decrease in prices. You can see the statistical nature of that graph, previously. It's holding very close to the line. I can't say the same for conventional energy. Figure one here is from the Energy Information Administration of the Department of Energy. It shows natural gas prices for the last 30 years.

That's a hell of a ride. Now these are prices that show up in farmers' bottom lines. Farmers buy natural gas directly for residential and facility heating and they buy electricity which is increasingly generated by natural gas. These costs end up in farmers' bottom lines, more and more with deregulation, especially. They're factored into by banks when they consider the financial security of the farm for investment, et cetera, and there's just no way of predicting them. It's yet one more risk that a farmer has to absorb in addition to weather crop yields, commodity prices, et cetera, and there's no particular reason for that to be. Next slide, please.

Because the most compelling part of the solar energy system is that it's a fire-and-forget system, so to speak. You buy it, you put it up and you forget about it for 20 or 25 years, and for the duration of that time, you have a guaranteed fuel supply.

Unfortunately, that means it's a high capital cost. It's like if you bought a Honda Civic and the Honda dealership would come to your house and fill it up with gas every morning, that'd probably be an \$80,000 car. There is an opportunity here, however. Section 9006 is an up-front incentive program. It provides loans; it provides grants.

It doesn't provide money for maintenance or research or data gathering.

So, ideally, you'd be looking for systems which are most suitable for an up-front incentive, and I can't think of anything better than solar.

The only thing you need to do to make it financially relevant and financially viable for its entire lifetime is to provide a capital cost [?], up front. Next slide, please.

Now of course that high capital cost deserves a sophisticated analysis. You can't walk into a Kyocera dealer, pick up the tag on a panel, look at the number of KW it puts out and punch it through your watch calculator. You need to do a sophisticated evaluation of what the actual cost to the farmer will be.

For instance, there are a number of state initiatives, and financing specifically for solar energy equipment and which specifically allowed double dipping with other federal incentives and federal programs. All of these are listed in a very comprehensive list on the DSIRE Web site maintained in part by the Department of Energy which is the Database of State Incentives for Renewable Energy, [Dsire.usa.org](http://Dsire.usa.org), and there's many opportunities for synergistic funding there.

Also, when you're considering the cost, you have to consider the likelihood of a stranded system. Solar no longer represents a technical risk. Solar panels power our satellite communications. They power critical national security facilities.

They power a number of military systems. They're out of the box, prepackaged, modular systems, and if you hand over the cash for one, you know it will work and you know for how long.

You can't necessarily say that about a more experimental system or about a built to order, or contracted or designed system. You have to factor in the financial risk that you will pay for that system and that two years from now, five years from now, it will crap out and the Department of Agriculture will have no funding under 9006 to go out there and fix it, and that money will have been wasted.

There's the opportunity to avoid future maintenance and infrastructure costs which are not funded under this program and therefore you don't have to add another program, and most interestingly, the Department of Agriculture is still responsible for a lot of the rural electrification infrastructure.

Now demographic patterns change, the nature of the grid has changed, and now there are a lot of loads at the end of very extended electricity distribution paths that are only

getting older. Some of them are 25, 40 years old now. This infrastructure the USDA will be responsible for in the coming years when it starts to fall apart and it may be beneficial to start to gain experience with these technologies for rural electrification and rural energy independence while you can.

There's also an opportunity for zero day paybacks on a lot of solars, for residential electricity and for water pumping alike. As Cecilia mentioned, if you get two miles away from the grid they're going to charge you \$40,000 to extend the grid out and that's 4KW, 5KW worth of solar, which will power a substantial load.

With that steady cost decrease, it's gotten to the point where we're inching meter by meter up on to the grid, and if you're more than 500 meters away from the grid, more than a kilometer away from the grid, you may not have to worry about a payback period because your payback period may be the day you show up with that system on the back of your truck.

Especially if you have to rip up the pavement or put out poles, put a new transformer on your barn for just a small lighting load. It doesn't make sense. Next slide, please.

There are also noncost benefits to the Department of Energy that might not be immediately obvious. Solar is a clean, ready, domestic energy source. If you were to give me a thousand dollars right now to go to Cecilia to provide you a 100 watt system, guaranteed, probably power a good portion of this auditorium. There's no need for experiment, there's no need for market development and there's no hoping that a technology will emerge.

Solar is primarily domestically manufactured from recycled materials, usually from the microprocessor industry, and can be recycled at the end of its life as well.

As I said, you can proactively replace the aging rural electrification infrastructure, kind of remove that Damocles sword from above the Department of Agriculture's head.

There's also the incentive that there's a rapid deployment in the ease of administration here. You don't have to worry if someone has an appropriate siting plan or all of the appropriate approvals, or a workable design. If you hand someone a loan, they can go out and buy a prepackaged system. It's the ultimate in replicability. There's a good Government argument to be made for the synergistic effect with the state incentives. States want you to put solar in their state. They've expended funds for this, they have tax credits, and there's no reason not to work with those to obtain the maximum benefit for all the programs which have been established. Next slide, please.

Of course there are the farmers, ranchers, and rural small businesses who will be receiving these grants. The best part of solar energy in small-scale systems, for instance, fence electrification, water bubblers, remote lighting, remote communications, is that the benefits are focused on the farmer. They're not defused throughout, for instance, the fuel market or the electricity market. They are focused on the person who actually receives the grant and that makes the benefit for the grant more salient, more trackable, et cetera.

Solar energy systems being highly standardized are supported nationwide by a series of large, mature corporations, and some very large transnational corporations, and are maintainable by their very nature. They're not a lot more complex than a window.

Many of these are also labor-saving and cost-insulating devices. In a lot of rural areas, as you noticed with the problem of young people living in rural areas, like the one I grew up in, there's a lot of labor problems on farms. There's too much work and not enough people to do it. Very flexible portable solar systems can help to relieve this. Could I have just my last slide, please.

Our final recommendation is to just prioritize, prebuild standardized systems which are on site and which go to the farmer, including rural residential systems, to fund only systems which are on site and whose benefits accrue to the farmer, to simplify the application and to tailor your education efforts to the point where appliance scale solar, your fence electrification, et cetera, can participate, and to allocate \$5 million of the \$23 million specifically for solar projects.

It's enough to get \$20 million of projects out there. If you think about it, that can make this product instantly pervasive and rapidly accelerate an already impressive trend.

Thank you for the opportunity.

MR. ROUNDTREE: Good morning. My name is Steve Roundtree. I'm with Southeastern Lumber Manufacturers Association in Atlanta, and we represent about 230 independent sawmills, primary lumber producers located in the southeastern quadrant of the United States, from Texas up through Virginia.

Since I was 25 years old when Jimmy Carter was here, I remember quite well the attitudes and whatnot. But as I said, our members are primary manufacturers, they take logs from the forest and manufacture two by fours and two by sixes. That is their primarily product. But they also produce a lot of byproducts in the form of chips and sawdust and bark and shavings, that are currently utilized. Next slide, please.

In addition to those sawmill byproducts, there's a lot of other wood biomass available, that is currently terribly underutilized, and much of this is residue from logging operations that is currently left on the site, on harvest sites, which is either burnt or is just left there to rot.

In Winrose [?], we have one member who has conducted research that indicates that there are literally millions of tons of this fiber left on harvest sites every year. I'll have more about that in just a moment.

Thirdly, overly dense stands of living or dead timber that threatens the health of our public and private forest, especially on public lands, as the fires out West were very deadly and devastating testimony to that overstocking situation in our national forests that needs to be addressed. Next slide, please.

As I said, our members produce a lot of different byproducts and they're currently all used at varying prices. Generally, the prices for the byproducts have been trending down because the supply, or the actual capacity, paper and pulp capacity in the United States is declining. There is an error on this slide. That should be since 1968, 58 pulp and paper mills have closed. In 2001, we had eight paper and pulp mills had closed. But, nonetheless, the trend is down for which--this is the primary market for wood chips and as the paper industry moves offshore due to stringent environmental regulations in the United States, the markets for these wood chips and for pulp wood are diminishing, the prices are dropping, it's affecting private land owners as well as the sawmills and we need to find new markets for these byproducts. Next slide, please.

This is just to give you an idea of how much biomass the members of our particular association produce. A total biomass of almost 12 million tons of wood fiber. This is only a fraction of what's actually produced in southeast and still a smaller fraction of what's produced nationwide, because we only represent about 20 percent of the entire lumber production in the Southeast. So in the Southeast, there would be approximately 58 million tons of this material produced. Nationwide, I have no idea, but it's considerably more than that number.

Other potential sources of wood fiber include logging residue. This is what I mentioned earlier. In the State of South Carolina alone, there are 5 million tons left on the ground, that is either burnt or left to rot. That is a tremendous resource that could be converted to energy through wood-fired, electric-generating facilities. We would like to see more research done there. Again, it's a tremendous waste.

If you multiply that by twelve states, and South Carolina is probably less than average in terms of production in the scheme of our organization, you'd have 60 million tons of



logging residue that could be used to fire wood-fired generating facilities.

Pulpwood thinnings. There's a huge volume of pulpwood on the market. These are pine plantations, about a million acres of them are planted and have been planted since the 1980's, and the prices for pulpwood are extremely depressed. Many rural private landowners are not being able to have their plantations thinned because there's no market for that pulpwood.

However, if we had wood-fired generating facilities located in the rural Southeast, there would be a tremendous market for those pulpwood vendings, and a tremendous benefit to the rural communities.

Thirdly, construction and demolition debris. I have no idea about the volume of this but it is substantial, and lastly, the national forest timber stand improvement. That is removal of overstock, live and dead trees, should be a priority of the U.S. Forest Service. Next slide, please.

These have pretty much been covered. These are the three primary methods that are currently used for converting wood into energy. Co-firing with coal in existing generating facilities is being done at Meade's [ph] West Vaco [ph] plant in Charleston, South Carolina, and several other locations in the Southeast.

Santee Cooper utility in South Carolina used all the blown-down timber from Hurricane Hugo to coal-fire their coal-fired plants during that time period, and they blended about 10 percent wood with 90 percent coal.

Gassification is a process involving heating the organic material and driving a vast majority of its energy potential. There's a project in Vermont that is very successful. It's a joint project with DOE and industry. Ferco [ph] I believe is the name of the company but it's a successful model that should be followed.

And fermenting the biomass to produce ethanol, that's our friends on the corn side have that down pat, but the wood products industry has a way to go. But we do have one specific recommendation regarding that. Next slide, please.

And that entails some research that is currently being done by Mississippi State University. I have their proposal attached to my written documents, that the panel has. They are currently budgeting about \$37,000 to research the marketing and the logistical feasibility of this process. Technically, they think it can be done, they know it can be done, and they plan on processing wood chips, creating a biodiesel additive which will be blended with diesel at a 20 percent ratio.

So once they get through this accelerated research program that will last from six to nine months, we would hope that USDA Rural Development would look favorably upon granting additional funds to this particular project.

In the study, in Mississippi alone, they estimate that the increased value of wood chips would be \$300 million. This would be to the forest land owners, sawmills, small businesses, throughout rural Mississippi, and if you multiply that nationwide or at least across the Southeast, you can see a huge financial benefit.

The value for timber growers through enhanced value or prices for pulpwood thinnings is estimated to be one billion dollars. So we feel like that has a lot of potential and we hope the USDA will contact Mississippi State and cooperate with them and provide some funding. We also have some general recommendations that are listed in the printed material, and I hope you'll take a look at those, and I appreciate your time. Thank you.

MR. ELLISON: Thank you to all our speakers this morning.

A few announcements before we break for lunch. A list of participating stakeholders will be available at the registration table following lunch. Also, participant stakeholders who did not obtain a name tag when they arrived this morning, can pick up a name tag at the registration table.

Remember, any time you're walking in the halls, you will need to display the guest ID provided to you when you checked in this morning. For the lunch break, the cafeteria is located out the doors and to the right. Proceed to Wing 3 and turn right again. The cafeteria is halfway down the hall, a map is in the folder you received, and restrooms are located out the doors and to the left in Wing 6, opposite direction of the cafeteria.

We will reconvene at 12:30. Thank you.

[Luncheon recess.]

## AFTERNOON SESSION

[12:30 p.m.]

MR. ELLISON: My name is Bob Ellison. I am pleased to act today as moderator and timekeeper.

This afternoon, Rural Development is holding a public meeting for interested persons to express their views on developing regulations for implementation of Section 9006, Renewable Energy Systems and Energy Efficiency Improvement Program created with passage of the 2002 Farm Bill.

As published in the Federal Register, this meeting is scheduled to end today at 3:00 p.m. but written testimony is allowed through December 6.

Just a few housekeeping announcements before we start again. Any time you are walking in the halls, you will need to display the guest ID provided to you when you checked in this morning. The restrooms are located out the doors behind, and to the left in Wing 6, and please turn off any pagers or mobile phones during the meeting.

Information on rural development programs can be found at [www.rurdev.usda.gov](http://www.rurdev.usda.gov). I have been informed that building maintenance is attempting to turn up the heat in here a little bit.

Joining us this afternoon is a new panelist, Don Viviani, who's senior science advisor on economic policy to the EPA administrator, and will represent EPA on this panel.

I would like to remind that each presenter has been contacted and made aware of today's proceedings. Each presenter will be allowed ten minutes. I will act as the official timekeeper and you will be given a one minute warning and a 30-second warning. Given the number of presenters, please keep to your allotted time.

When presenting PowerPoint, please indicate to the computer operator when the next slide is required. We will proceed in order and I ask that you enter through the doors to my right one minute before your time, to minimize the transition times between presentations. To help expedite this process, Dave Coombs and Mike Kossey will help usher presenters to the stage and back to their seats.

So please follow their instructions. I think we're ready to begin.

MS. : Good afternoon. I hope everybody had a nice lunch and not sleepy. Thank you very much for giving me the opportunity to represent the American Society of Agricultural Engineers. It's also known as the Society for Engineering in Agriculture, Food and Biological System. It is a 9,000 member educational and technical society founded in 1907. In a few years, we will be celebrating the

100th anniversary. The society is an American National Standard Institute, accredited standard developer and annually, we publish over 200 voluntary codes [?], sets the standard for engineer in agriculture, food and biological systems.

For that reason, we cross all over, all engineer, all renewable projects. Indeed, we have our member renewable power generation, biomass energy industrial products, forest harvest and utilization, bioconversion and biomass. We're also working on biostandards of property of biomass used for combustion. We would like to, in reference to the seven questions you posed to us, we would like to propose the following ten pillars.

For a project to be funded, must have strategic planning or decision support, simulation models, and there are several models on the shelf, off the shelf, but we like to recommend specifically-designed models to address specific needs.

We also like to recommend--the second pillar is the project should be proactive, meaning it will identify the exact need or prevent certain catastrophe or disaster like energy shortage, or in this particular area of region, or geographical region.

Also could address to solve or resolve certain issues that existing today. So it could be innovative as well as existing project that need to be improved.

We would like to recommend that the project would be funded if they have used top-down measures, meaning looking at the total picture, and then trickle it down to small element, to make sure we included every element of it.

For any project, any renewable resources to succeed in any region must have to create right culture. We would like the administration examine those cultural, appropriate culture to really embed [?] project in it, and to make sure they will succeed. Also the project that are inclusive, or integrated in nature, to include all the elements in that process. In an economic way, we say upstream, downstream, or backward, forward. But whatever appropriate or this region, that the project is proposed, or identified.

We would believe in projects that bene--total participation, but everybody in the rural community is able to participate and benefit out of it. So we would like to recommend that this element is included.

With today's age of information technology, transparency is a crucial issue for any project to succeed, that everybody can be able to see where we're going, where we're coming from, and what is the benefit for all. I believe the partnership has been questioned, or whether it should be element to consider or not. We do recommend partnership very highly. We believe partnership imbues synergism,

meaning one plus one equals five. You get more out of--and this in agriculture a well-known fact; anybody who worked in agriculture, adding two together might increase the density [?] of the--the value or the economic return.

As far as who partner with what, I think has to be specific for each region or for each project, because it's valuable not to be [unintell.].

Evaluation and monitoring is very, very important in any project, and the proposed project with strong system or timetable for evaluation or monitoring should be considered very highly, and we would like to recommend some grant to leading edge research technology.

Because there is a benefit of being number one, and United States being known to be number one in technology, and giving a chance for rural to be number one in the world in developing renewal energy resources is very valuable, and so we ask the administration or we would like to recommend consider those projects very highly. Thank you very much.

MR. SCHERING: Good afternoon. I'm Chris Schering [ph] from WorldWater Corporation in Pennington, New Jersey, and I'd like firstly to thank the distinguished panel from USDA for this opportunity to address the issue of 9006.

I want to continue the theme of this morning, which seemed to have been solar photovoltaics are here and now, and ready to do something, but I'd like to take it in a different direction. Could I have the next slide, please.

WorldWater Corporation has got a decade of experience of developing energy and water solutions in the developing world, to a certain extent for agricultural applications. But today, we're taking that experience and applying it to the agricultural community in the United States. We're taking solar photovoltaics to a whole different scale and we're applying it to water pumping and the powering of compressors for the agricultural industry in a scale previously thought to be totally impossible.

So WorldWater is now providing large-scale sustainable solutions for the U.S. agricultural sector, and WorldWater, with its patented technology, is powering irrigation pumps and compressors up to a scale of 600 horsepower. Previously, folks had believed that you could only use photovoltaics for 5 horsepower systems, and somewhat smaller, for drinking use.

If I could have the next slide, please.

As many of you in this room probably already know, moving water, or compressors for refrigeration take around about 90 percent of the power needs, or represent, rather, 90 percent of the power needs of the agricultural industry, and at the moment, WorldWater is able to satisfy both of those applications.

We're able to displace either the grid power or diesel power used for large-scale irrigation systems, and if you look, as we have done recently, at the San Joaquin Valley, which is a major agricultural production area, the air quality there was recently deemed to be the worst in California.

This is largely due to the existence of very, very large-scale diesel systems for pumping irrigation water. We're able to replace these large-scale diesel systems with solar photovoltaics. That's the message, and the question is, How does it work? What we're making use of, primarily in California, and we're now doing the same sorts of things in New Jersey, is we're making use of the existing rebate programs for solar photovoltaic systems, and the availability of net metering facilities to essentially make maximum use of photovoltaics, and when the solar power is available to drive the pumps, either directly, or to drive them in combination with grid power, if more power is needed, or if the sun is not fully available, and the operation and the switching between systems is completely automatic, and so using this approach, there is no need to buy grid power for the majority of the applications.

Given that the time of day metering that exists in many parts of California, and the need to irrigate during the middle of the day, or to drive refrigerators the middle of the day, this is a very major impact. Next slide, please.

At the moment, this is a--I just want to give you one example in a photographic form. This is a 50 horsepower system recently installed in California. It's able to drive the existing AC pumps entirely from solar, if needed, in the case when the grid is down, or it makes use of grid power to augment it, if it wants it, and so this is an example, and we're just now constructing 250 and 500 horsepower systems to do just this. Next slide, please.

In terms of addressing what type of facility is needed to accelerate the usage of photovoltaics in this type of application, what we find is that farmers already are able to make use of existing rebate programs and investment tax credits, and the accelerated depreciation allowances, and many times the farmers can find their own financing through their existing banking or other financial relationships.

We get involved in offering loan programs, but the real limit that we have right now is that those loan programs tend to be only available over a short period, seven year maximum loans, and this really is not enough to fully accelerate and fully reflect the value of these long-term solar photovoltaic systems, which we all know in the photovoltaic industry, and it seems nowadays the broader industry is knowing that photovoltaics are guaranteed for 20 to 35 years. So we really need to provide a loan resource that can reflect that and buy down the cost of purchasing, or the cost of the loan, should I say, so that we can in

fact arrive at a purchasing price for the photovoltaic system, which turns out to be less than the cost of the utility bill that the farmer was originally experiencing. Next slide, please.

What we find in some instances, when we're looking at the time of day metering and the times when they need maximum power in the agricultural sector, is that the effective tariff rate can be as high as 20 cents for a kilowatt hour, and if in fact we could arrange long-term finance guarantees for these loans, we could in fact arrive at something approaching five-cent electricity from photovoltaics.

If we can do that, obviously, many more farmers will be opting to take a solar solution. Next slide, please.

Why provide a loan guarantee and where should we start first, or where will we suggest you start first?

Well, any USDA funds would produce the maximum output, if in fact you use them in loan guarantees rather than in terms of direct loans or in terms of grants. There are loan resources already available for solar power plants, and these can be made available to viable agricultural businesses in states with favorable incentive programs, and once these facilities are used up, one might considering establishing incentive programs for the adoption of renewable in those other states which haven't yet adopted or provided rebate programs. Next slide, please.

So the message I want to leave you with is that photovoltaics are certainly available to the agricultural sector, they're being adopted right now by agricultural production areas in California and in New Jersey, and, indeed, they're being used for irrigation pumps, large-scale irrigation pumps, and large-scale hydro coolers, and also in the wine growing industry.

So we believe that this is a way where we can have a maximum impact for a minimum use of the USDA resources. Thank you. The next slide, please. And the next. Thank you very much.

MR. : Good afternoon. My name is Comyar Zavay [ph]. I am director of technology transfer and development for Energy Co-Opportunity. Next slide, please.

We are a cooperative of 300 electric cooperatives. Our members are electric cooperatives, both generation and transmission and distribution. We were formed in 1998 to ensure that the electric cooperative community stays competitive in the converging energy industry. Next, please. And we're also known as a leader in the distributed generation area. Next slide, please.

Just about nine months ago, we started an initiative into biogas, and partially because of the interest in our community, we found out that there was a large number of

rural applications, and as we investigated further, there were tremendous benefits, both spread all ways--customers, utilities, and also borrowed from an energy perspective. If you think about a dairy farm, a dairy farm can produce--a thousand cow dairy farm can produce 60,000 cubic feet of methane a day, and when you look at the number of dairy farms across the country, you can begin to actually see the dimensions of the biogas industry for dairy applications.

Also in other projects, as we have begun to see these projects, we see that each project has the potential to stimulate the local economy. It actually has the opportunity to grow the local economy, and on the side, it also provides significant economic benefit for all parties.

Next slide, please. Our approach is to stay within our confine of what we know best, and that is energy. We are an energy company. So what we do essentially, we develop, facilitate and implement biogas-fueled combined power projects, distributed generation projects for the farmers, and for the electric cooperative.

We also partner with the digester companies who know their business. We help them evaluate, we help the farmer evaluate, we help facilitate, and we help in the implementation of the projects as we go forward. Next slide, please.

In over nine months, we have an impressive list of projects that have come to us. These projects range five states, and include approximately ten to twelve thousand cows, and those numbers are actually growing. Next slide, please.

What we see common in all these projects, project drivers, essentially, is number one, that the customer has to be motivated. It has to be the wish of a farmer to be wanting to be in this business, and that has been the most critical point of success for us. The farm benefits obviously include environmental. It includes the reduction of costs, both spreading costs and energy costs at the local level.

From an economics perspective, there are a number of different line items that a farmer looks at. It includes capital costs but there are a number of other issues also involved that I've itemized in my written submission to you. But one of the most important drivers of the projects has always been the assistance that's provided, whether at the state level, whether by the local energy agencies, or the environmental, and at the federal level. At the federal level, the farmers have not really approached because there has not been that level of funding before, but with this bill, I think there is potentially a very large number of projects. Next slide, please.

The type of projects that we encourage you to consider are those that include advanced low emission power generation technologies. Part of the reason we say this is because we



are trying to be environmentally conscious of the reason why we are here and we are trying to reduce the environmental emissions from the farm. As a result, what we recommend is you consider those technologies that actually provide that to the farmer.

In this regard, we recommend that you consider integrated microturbine [?] Sterling engines. These technologies are at various stages of development. We also offer better solutions to the conventional refurbished technologies, which is right now the common technology used in this application. They are more expensive than the currently-used technologies. As a result, they require a larger amount of grant for applications. Next slide, please.

It can be done. We have done this. We have actually designed and delivered an integrated microturbine skid [?] to a customer in New York. This particular project is still waiting for the biogas generation from the digester, and we're working with the local farmers to actually make that happen. But the package actually includes not only the power generation. It includes all the controls. It includes all the, Petri cover and everything. So from a farmer perspective, the only thing that he does essentially, he buys the equipment, the equipment gets delivered, just gets slugged [?] up and it's ready to go. Next slide, please.

The types of financial assistance that we see most useful in most projects, I want to echo some of the things I heard this morning. Grants are, by far, the most powerful means of encouraging these projects. The success stories that have existed in the past are the state funds, both in New York and California, have actually seeded many projects. There are quite a few projects in the State of New York that are going forward. They're using the conventional technologies.

I will talk about one of those projects as well. As to federal assistance, I think what we recommend is that you consider funding to a point where projects become economically viable, and that is below a five-year payback for the farmer. At that point I think the project has a positive cashflow, it's not an economic burden for the owner.

In terms of loan assistance, it's always helpful. What we have seen is in small projects, it's sort of the point that closes the deal but it's critical to the larger project. In projects that are larger than 500 kilowatts, loan assistance is very, very critical. Next slide, please.

Let me conclude by an example of some of the projects we are working on. In New York State, we are working on one dairy which has a thousand cow farm. This particular project actually has the potential to grow to two thousand cows, based on the planning, but it's adjacent to a landfill, and

there is also an industry that's locating nearby. So there is massive potential for biogas generation and it could be a landmark project.

Also, for the local economy, this particular area has been depressed, so we are looking at this as an economic development project for this area.

In Minnesota, there is a dairy farm that has actually secured a substantial amount of grant toward the project. However, the funding is not there because of the low energy prices, for him to move to the next step, and he requires some additional financial assistance to actually make this project go. So he's waiting for that to happen. He's actually contacting several federal and state authorities to make that happen.

In Nebraska, there's another project that we are looking at. That project has a potential for--there's 1800 cows, currently, potentially growing to 3600. That's also a fairly substantial project.

As I was walking out the door yesterday, two projects came in from Ohio. What I'm trying to tell you is that there is substantial market potential for the dairy digesters. The means by which it--but it requires a fuel and that fuel can be accomplished through some form of a grant so that these folks can actually move towards more of a viable financial project. Thank you. And my contact information. Thank you.

MS. : Good afternoon. My name is Faith Bugle [?], and I'm here representing Environmental Law and Policy Center of the Midwest, along with Jim Lyons [ph]. We are a public interest environmental organization with an interest in economic development opportunities, and we're based in Chicago, Illinois. We offer the following comments regarding Section 9006.

Initially, I'd like to thank the USDA for its efforts to involve input from a broad group of interested parties. Today, I will be discussing the types of renewable energy systems and energy efficiency improvements that we believe should be given priority during the first round of the program funding.

Later this afternoon, Jim Lyons will highlight an approach for evaluating project applications.

I'd like to begin by discussing proceeding by a rule making or via notice of funding availability. The comments we provide today apply to either procedure; however, we would urge the USDA to proceed via the NOFA [ph] process, to make the Section 9006 funds available as soon as possible in FY03. These would get the incentives to the farmers, ranchers, and rural small businesses sooner.

It would provide sufficient--we have sufficient details for a NOFA from the comments you're receiving today as well as from the language of Section 9006 itself, and it would also, could be used as a basis for a later rule making.

I'd like to now turn to our recommendations, specifically regarding the eligible grant loan and loan guarantee uses. We recommend the following projects as eligible for funding under Section 9006. First, I'd like to emphasize energy efficiency projects. Our recommendation is that eligible parties may apply for grants, loans, and loan guarantees for the cost of on-site energy efficiency projects.

We would like to direct funding specifically towards farmers, ranchers, and rural small businesses that have received funds from state programs for energy efficiency and encourage those parties to apply for matching federal grants.

The example of the types of projects that we would like to see under this section include energy efficiency upgrades for Thompson Motors for dairy operations, and water and irrigation pumping equipment.

Energy efficient lighting and motor systems upgrades, utilizing EnergyStar or other nationally rated energy-efficient equipment.

Energy efficiency upgrades to residences located on a farm or ranch, and finally, on-site energy efficiency audit. We make this recommendation based on the statements in Section 9006, and the statements in the managers' statements supporting energy efficiency projects.

Energy efficiency projects are highly cost-effective. They come on line quickly. They provide a significant financial advantage for farmers and ranchers via reduced energy costs, and they often provide electric distribution grid reliability benefits.

The economic benefits of energy efficiency projects are often not well understood because of the initial cost of those projects appearing to be steep.

Section 9006 funding could overcome this barrier. The matching mechanism recommended in this section would foster valuable state and federal partnerships and also leverage the federal funds available under this section.

We also recommend that a significant portion of the funds available under 9006 be directed towards energy efficiency projects because of their cost-effective nature.

I'd like to make a second recommendation for uses of the funding to be directed toward distributed generation small-scale renewable energy projects.

We'd like to recommend grants, loans, and loan guarantees for wind, solar and biomass gassification projects of up to \$100,000 in total cost. We emphasize this recommendation because it would provide renewable energy distribution generation projects that serve the project owner's own electrical load.

We note that under these projects, you're likely to see a great number of applications for small-scale wind [?] because it is the most mature technology and enjoys broad popular interest in the farm community, and projects are under development or on the market in the 40 kilowatt range, and the \$100,000 level would capture those projects as well.

However, we would also like to emphasize solar, electric, and biomass gassification projects. Even though these are not as evolved as winds technology, they should still be eligible to compete for grants on equal terms.

Finally, we'd like to emphasize solar thermal projects under this section for producing heat, for hot water and space heating, because those could be very competitive in areas with established solar thermal dealers.

Grants would be an integral piece of the project financing until the scales of production for this type of renewal energy technology are significantly increased, and later loans and loan guarantees would help lower cost of production.

We would recommend that USDA prioritize projects in states with net metering and with parallel buy-down programs. The third area that we recommend funding is for grants, loans and loan guarantees for wind projects with a nameplate capacity between 70 kilowatts and 7 to 10 megawatts.

These are projects where owners seek to market the renewable power through the electric distribution grid and provide a new cash crop for farmers and ranchers. These programs can provide practical business models for projects of this scale. They tend to be cost-effective renewable energy technologies, but beyond the reach of local financial developers.

Consequently, funding projects in this range would fund the use of local planning and construction contractors, and therefore maximize local economic development benefits.

Over the long term, USDA may want to consider limiting illegality of utility scale wind projects to loan guarantees; however, over the short term grants are important to provide models of successful projects.

Loans and loan guarantees are important because currently there are high interest rates and burdensome loan terms associated with financing those projects.

The fourth area that we'd like to make a recommendation in is for wind resource assessments for eligible parties to receive grants for assessment of wind resources in rural areas.

We make this recommendation specifically because of the language included in the farm bill managers' statement, which explicitly supports audits. Audits, which indicate the most effective improvements for energy efficiency, aren't, in essence, the same as assessments which identify areas for the best wind resources.

For utility-scale wind, assessments are a critical aspect of the financing request. Since this recommendation we would like to make is for energy capture from anaerobic digesters, we would recommend that eligible parties can apply for grants for the purchase of a boiler, electric generator, electric generator with hot water recovery system, to use methane from anaerobic digesters, decomposing manure, wastewater and other farm wastes. We would recommend that these grants not exceed \$25,000 or 25 percent, whichever is less.

We would recommend a prohibition in this section, however, on funding the purchase, construction, engineering, and design work of a wastewater or manure storage lagoon or any other manure capture storage treatment system or any water pollution control system.

The reason for this recommendation is that is behind the primary intent of the energy title, which was emphasizing on farm renewable energy and energy efficiency capture. While these secondary environmental benefits are important, the primary goal of the title is for energy-related systems and not towards these other various meritorious farm and ranch management practices which can be funded through other farm bill programs.

Specifically, under this recommendation, we would emphasize that funding should be coordinated with the new USDA rules and regulations for the environmental quality incentive programs which provide funding for animal waste management facilities.

The final area that we'd like to make a recommendation in is biomass energy cash crop feedstock support grants. We recommend that eligible parties apply for grants to subsidize the production of biomass feedstock that are grown for the purpose of power generation. We would recommend grants not exceeding \$10 per ton and \$500,000 per project per year. We make this recommendation because energy crops are for the potential to become a significant new market for farmers across America, thus, diversifying farm income.

There are also some secondary environmental advantages that can be captured here, which include water quality improvement, increased habitat and carbon sequestration.

The rest of our recommendations can be read in more detail in our written comments, and I thank you for your attention to this today.

MR. SIEGAL: I would like to take this opportunity to thank Under Secretary Dorr, and your colleagues, and the panel for affording me the opportunity to speak here this afternoon. My name is Danny Siegal. I'm chairman and chief executive officer of National Produce Production.

My subject is a discussion of a summary of the congressional purpose for enacting Section 906 of the Farm Security and Rural Investment Act of the year 2002, and especially Subsection (a) and Subsection (a)(1) and (a)(2) thereof.

The importance, and purpose and urgent need for Section 906 and Subsection (a), and Subsections (a)(1) and (a)(2) of the act, and specifically the new guaranty authority contained therein, is to encourage self-sustainable domestic energy production in a way that financially benefits farmers and that does not need federal or state grants or subsidies.

The use of the \$23 million of subsidies available to the USDA under Section 906 and referred to in Subsection (b) of Section 906, has no relevance to new loan guaranty authority enacted in Subsection (a), but only to loan guarantees when the loan guarantees are under other law.

There is no need for new loan guaranty authority to be enacted in Subsection (a) of Section 906, since there is plentiful loan guaranty authority under other law, to make use of all of the funds for subsidies and grants appropriated by Congress. Accordingly, the new loan guaranty authority was enacted to encourage free-enterprise farming that can be self-sustainable and not need federal or state grants and subsidies.

Furthermore, the legislative intent of Congress in enacting Subsection (a) and Subsections (a)(1) and (a)(2) of Section 906 of the act is to encourage private-sector, commercial-size, self-sustainable solutions to environmental, safe drinking water and preventive health care problems; for example, such as the killing of the pathogens like *Cryptosporidium* engendered by dairy manure through thermophilic anaerobic digestion; *Cryptosporidium* being, under the United States Public Health Service, probably one of the most, if not the most, serious threat to the safe drinking water in the United States.

In addition to energy production, that also includes produce production in the United States. Produce, like energy, is greatly imported to the United States, and in the case of produce, it's probably one of the serious causes for the depression in many, many areas of American agriculture. The legislative intent of Congress also includes the encouragement of proven technology through federal budget-

neutral credit insurance. The purpose for this legislation is to especially encourage self-sustainable and budget-neutral farming projects that provide solutions to manure runoff problems and add net income to animal farmers in the process and that create all-year-round, middle-class, agricultural jobs, encouraging young Americans to earn their living in farming, as they always had until recent decades, and projects to produce energy and produce, both of which produce, both of which, as I mentioned, are currently being imported in huge amounts to the United States.

Encouragement regarding the foregoing to the American banking community is essential to overcome the start-up label generally assigned to such farming by the American banking community if they are new farming entities in the United States, even when there are already, for example, proven commercial-size farming entities like that in foreign countries.

This is especially urgent now. The start-up label is generally assigned to such commercial-size farming entities even when they provide the foregoing important, self-sustainable societal benefits. The urgency in providing U.S. agriculture with access to such proven technology is particularly important because of the serious depression in agriculture in the United States, including dairy farming, and the serious environmental, safe drinking water, energy and health care problems referred to above.

Accordingly, the congressional intent in legislating Subsection (a) and Subsections (a)(1) and (a)(2) of Section 906 of the act is to provide the new guaranty authority to attract farming entities that can pay its way. This refers to farmers who can pay to the U.S. Government the full actuarial and administrative costs in the premium, as defined by the Office of Management and Budget, in cooperation with the USDA, for the new guaranty authorized in the aforesaid Subsection (a) and that have a substantial profit margin in their EBITDA, thereby being more likely to be self-sustainable.

Congress would not have enacted new guaranty authority in Subsection 906 of the act unless it had a special purpose not served by the existing guaranty authority. The existing guaranty authority, which is available, involves the use of subsidies and grants and is, thereby, accordingly, limited in size and in the critical mass of the farming project which is being subsidized. The new guaranty authority has as its purpose the introduction and use of commercial-size farming that, for example, reflect proven technology and has critical mass that allows it to be profitable in the United States and to pay its way; i.e., to pay the full actuarial cost for issuing and administering the new federal guaranty and be self-sustainable year-after-year without subsidies or grants.

Furthermore, the ideal farming candidate for this guaranty would not only, in a self-sustainable way, produce energy, but also solve related environmental problems, safe drinking water problems, and kill pathogens, as I mentioned earlier, because of thermophilic anaerobic digestion. These pathogens are caused by manure runoff and are a tremendous burden to the expansion of dairy farms in the United States, and that lack of ability to expand has caused many dairy farms to go out of business.

And, furthermore, because of collecting the manure daily and saving the farmers their manure-management costs, it benefits dairy farmers where it's very, very important to them--in their net income, which is very marginal, unfortunately, and the lack of adequate net income causes many small dairy farmers, and large ones, too, to go out of business.

Such farming entity, for example, would grow greenhouse produce and replace greenhouse produce that is important, create all-year-round middle-class agricultural jobs, and many of them scientists that, from U.S. universities, are trained to be growers in a highly computerized, advanced, 21st century greenhouse facility and create these jobs in depressed agricultural counties and not need or desire or, if you excuse the expression, be addicted to federal or state grants or subsidies.

The new guaranty authority which has been enacted by Congress to attract self-sustainable farming is necessary because farming that does not need grants and subsidies is essential to return economic health to American agriculture, which until recent decades has always been the case. Subsidized guarantees and other subsidies and grants have not solved the foregoing problems in agriculture. For example, the new guaranty authority is essential to assist in returning farmers in the United States to being self-sustainable and not in need of subsidies and grants, as they have been in the recent past. The subsidies and grants could be compared, if you will excuse me, to addictive drugs that cause illness, yet the recipients keep wanting more.

The following is in response to the request to respond to comments on specific issues relating to Section 9006.

Preference should be given to new innovative technologies that are proven in commercial size.

Second, loan guarantees with private sector, nonguaranteed private participation be cited on a case-by-case basis; i.e., 20 percent, for example, of private participation with full payment to the federal government of the actuarial and administrative costs of the new loan guaranty premium will achieve high levels of self-sustainable farming solutions.

Accordingly, loan guarantees authorized as new guaranty authority in Section 906, Subsection (a), was enacted to



give the free-enterprise approach an opportunity and is the type of financial assistance most in need. Subsidized loan guarantees, grants and direct loans have accomplished very little in achieving a self-sustainable environment.

Our summary is in our written statement.

MR. HOLT: Good afternoon. My name is John Holt. I'm manager of Generation for the National Rural Electric Cooperative Association. That's a trade association located in Washington, D.C., with 900 rural electric cooperative members, serving 47 of the states and serving over 30 million rural consumers.

NRECA and its member cooperatives believe in, and endorse, the use of renewable energy resources and distributed generation as valuable assets to meet the growing needs of the U.S., while helping to reduce power plant emissions.

Rural electric cooperatives are seeking to ensure that when these renewable devices are added to the rural distribution lines, they have done so in a safe and reliable manner, without decreasing system stability or power quality, and I'll speak of that in a moment, more on that.

NRECA and its members are involved in ongoing or proposed projects that include wind. One of our members has 80 megawatts of wind power it just signed a contract for. Another member up in Minnesota is looking at a 100-megawatt wind farm. I'd like to say that most of this is purchased power. Under the current tax regulations where our co-ops do not get tax credits for wind, they are buying the output, but it's not economical to install it themselves.

I'd like to mention solar, but several of the speakers have already spoken about what our co-ops are doing in solar. I would like to be doing more in solar, but at least we've taken a direct step there.

In biomass, we actually have a project at the moment that is looking at coal firing of corn cobs in a coal-fired power plant. We're also purchasing the electricity from several of the animal waste to electricity on farms, and many of our co-ops are involved in landfill generation.

On community development, in South Dakota alone, the cooperatives there, instead of returning the capital credits to their members, they actually made noninterest loans to industries to study to come into the state. They leveraged, from their \$3 million in loans, they leveraged over \$200 million in industry, bringing it into the State of South Dakota. One of these was a \$40-million ethanol project.

I'll mention, and I've heard several of the speakers talk about, what I call "plug and play." We have a renewable device, we plug it on the lines, and everybody's happy. Well, utilities are not happy if it's not safe. There's a

lot going on at the moment. The IEEE has just put out a 1547. It's the standard for how to plug in or how to interconnect distributed generation and renewables into the grid.

FERC has a rulemaking process going on, and if I wasn't here, I'd be in New Orleans at that meeting, in which RUS, NRECA and our members are working on the rules that FERC wants to have to connect these renewable devices.

I'll show you something, and I'm not going to read it to everybody, but this is a tool kit that NRECA put out, and it tells--well, I'll just give you some of the sections. It's the Business and Conduct Guide for Distributed Generation, Consumer Guideline for Distributed Generation, Model Agreements for Distributed Generation. This is available for free to the public. It's on our web page. You don't have to ask for this volume. We also have it in a CD, and you'll get my name from the attendance, and you can contact me, and I'll get you a copy.

The major concern of the rural cooperatives and NRECA, when we add renewables and distributed generation, is the high capital costs of small units. Larger units are more cost-effective. You have high operating costs, again, for small units. Many of these small units are in R&D phase. We've heard about fuel cells, but there are only certain ones that are commercial at the moment. Most are still under development.

We would think here that going from the R&D phase to commercialization, grants would be very effective to bring some of these almost-here technologies on board.

As I've mentioned, we are really concerned about the possible safety and reliability effects to the connected grid. I heard a speaker say, you know, up to 10 megawatts. Well, a 10-megawatt unit at the end of a long radio line is very unsafe, it reverses all the flow. It has to be done correctly. So this, again, is what we're doing with the FERC and NOPRA, is trying to see that any renewable energy devices added to the system are safe.

Without adequate due diligence, individuals have made expensive investments in renewable resources that have proved uneconomic because the costs of the technology outweigh the value of its project. Now, NRECA feels that the Department of Agriculture can best implement Section 9006 of the farm bill by the following action:

We would suggest using the maximum funding for the grant program to help buy down the high initial costs of small renewable resources and energy efficiency improvements. We would also suggest allowing the rural utility services, through the rural electric cooperatives, to assist in the administration of the program under USDA guidelines and recommendations. After all, by definition of the Small

Business Administration, rural electric cooperatives are small businesses, all but a few of the larger generation and transmission.

Rural electric cooperatives have the necessary staff and expertise to deal with farmers, ranchers and other small businesses, and they do so on a daily basis.

Rural electric cooperatives have the knowledge and understanding of the technical and engineering problems regarding distribution lines that are going to have these renewable devices attached. The benefits of a much broader program, such as going through the cooperatives, could assist the entire community, not just a few of the farmers who are lucky enough to get the device added to their farm. We think if you go through the co-op, the entire community benefits, and it leverages the USDA dollars more value.

I thank you for the ability to speak to you today.

MS. KENDALL: Good afternoon. I'm Sarah Kendall. I'm the Washington office director of the Western Organization of Resource Council or WORC. WORC is a network of grassroots organizations from seven Western states. We have 7,000 members and 46 local chapters.

Our roots go back to the early 1970s, when the Rocky Mountains and Great Plains were targeted for fossil fuel production, and we continue to bring people together to influence energy policy decisions that affect their communities, their health, and their quality of life. Many of our members are family-size farmers and ranchers.

Thank you for the opportunity to comment. I have eight recommendations we'd like to make briefly, and we'll have more detail in our written statement.

First, we encourage USDA to move ahead in an inclusive, yet expedient, manner. The sooner you can make funding decisions, the more time and funds other governments and private entities are likely to be able to provide for matching funds and other support.

Secondly, in keeping with the spirit and intent of the legislation, we suggest that funds be evenly distributed between renewable energy and energy efficiency projects. Both deliver real benefits to farmers, ranchers, and rural small businesses, and it's imperative that both receive financial support.

Third, we'd like to see that funds be allocated to projects across the country and not unduly weighted toward a particular region.

Fourth, we recommend that funds be balanced between projects with a proven track record and promising new endeavors, but that the focus be on those that can be replicated elsewhere.

Fifth, we suggest that a significant portion of the available funds be dedicated to small-scale, decentralized, on-farm projects; energy production systems that are physically close to the load; and producer- and consumer-owned cooperatives.

Sixth, we recommend that USDA earmark grants and loan guarantees for small- and mid-size projects, such as wind-power projects less than 75 kilowatts in capacity. Projects of this magnitude often have less access to credit and financial resources than do larger projects.

Seventh, we suggest that the application process be simple, uniform and fair and that red tape and excess bureaucracy be limited as much as possible.

And, finally, we'd like to take this opportunity to call your attention to Section 9005 which, as you know, creates an energy audit and assessment program for farmers, ranchers, and rural small businesses. This is an important program that complements and adds value to the financing incentives in Section 9006. Unfortunately, no funding was allocated for 9005 in fiscal year 2003. We urge USDA to include at least \$10 million for Section 9005 in its fiscal year 2004 funding request.

Thank you, again, and as I said, we'll include more detail in our written comments.

MR. LYONS: Good afternoon. I apologize for running in like this. I was actually over meeting with Under Secretary Rey. My name is Jim Lyons, and I'm actually a professor now at the Yale School Forestry and Environmental Studies, but I'm here on behalf of the Environmental Law & Policy Center in Chicago.

I offer my comments, actually, as an addendum to comments that were offered earlier by Faith regarding the questions that were posed for this session.

I want to state, at the outset, that given the unique opportunity provided by this section of the farm bill and the resources now provided for investments in renewable energy systems, we think it's critically important that early on in the process we demonstrate the value and the importance of these investments; that is, that the Department seek opportunities to invest in projects that will be successful and demonstrate the utility of investments and renewable energy systems. Early success, we think, is critical in that regard.

To do so, we think projects have to have a high probability for success, that they need to capitalize on proven technology, and I think earlier today a comment was made of the fact that this section of the bill was not intended to promote new research and development.

And, third, that where working knowledge and partnerships with a proven track record increase the likelihood that initial investments could pay off, that the Department should capitalize on those opportunities.

We've actually evaluated the legislation and would propose a way of evaluating individual projects by the creation of, if you will, some evaluation criteria, and what I'd like to do is summarize at least one approach to looking at energy projects and how the Department might use this tool to set priorities.

Should USDA decide to develop criteria for use in allocating the funds, what we suggest is you set up a point system. Of course, this is done often with competitive grant programs. We would suggest, for the sake of argument, set up an evaluation system that has 25 total points which could be awarded to each proposal. Then, we'd suggest that you use the following evaluation criteria:

First of all, an important element is obviously the feasibility of a given project, and here we'd suggest that a maximum of six points could be awarded to each project. The applicant scores under this criteria could be weighted in favor of projects that are more economically viable, such as those with a shorter length of time until the energy savings or energy output generated by the project equals the cost of the project.

Scoring could also reflect positively the extent to which the project is likely to be feasible in other respects, such as whether sufficient planning has been done and whether those selected to provide the equipment and to perform the necessary construction and maintenance have sufficient qualifications. Obviously, those are the kinds of projects that are going to generate immediate return and have the higher probability of success.

Renewable energy projects, this could include a statement regarding the state or service area in which the project is located has a clear policy or proven track record that facilitates interconnection to the grid, and we think that is important for certain projects, in terms of their viability.

Higher scores should also be given to projects using established technologies; again, referring to the fact that this is really not intended to be a research program. We suggest six points for this particular criterion because the criterion reflects a number of considerations that are included in the statutory language in the authorizing bill.

The second criterion would be the size of the grant or the loan requested. Here, we'd suggest a maximum of five points, and on a sliding scale, we suggest that maximum points be awarded for grant requests up to \$25,000, 5 points; 3 points for a grant request between \$25,000 and

\$50,000; 1 point for a grant request between \$50,000 and \$100,000; and no points for projects over \$100,000. We'd also suggest, given the opportunity to extend the resources provided, that 5 points be awarded for loan and loan guarantee requests as opposed to grant requests.

The third criterion would be other funding sources. Points should be awarded to projects when state funding is available that could supplement federal funding. Up to 4 points should be awarded depending upon the percentage of projects that could be provided by the state. Four points should also be awarded to projects where there is no other federal funding available to support the project outside of 9006.

A fourth criterion would be efficiency, and here we'd suggest, again, that 4 points be awarded. An applicant should receive a higher score for greater output of energy or greater energy savings per dollar of public spending. Wind assessments and energy efficiency audits should be scored on an estimate of how much energy would be generated or saved should the ultimate project go forward.

The quantity of energy generated or saved by the project is one of the criterion, of course, that's included in the statute. We interpret this as quantity per taxpayer dollar because we think efficiency is a better measure than simply total output.

A fifth criterion, again, cited in the statute, is other environmental benefits, and there we'd suggest a maximum of 3 points, and to simply state that an applicant's score under this criterion should be weighted in favor of projects to provide additional environmental benefit beyond what might be required under current state or federal law. For example, many laws require anaerobic digesters. Instead of awarding points for meeting or complying with existing law, if there were additional environmental benefit associated with a project, then we'd suggest additional points be awarded.

Lastly, another criterion included in the statute is replicability, and there we'd suggest up to 3 points be awarded. And here the criterion should be weighted according to the extent to which the renewable energy system or energy efficiency improvement is replicable, and obviously that's going to have important value in terms of the ability to extend this technology after hopefully, with the investments that are made initially, we've demonstrated its utility.

So there we've tried to summarize--basically I've tried to summarize briefly one approach to evaluating all potential projects that are submitted under this authority, and a way to reflect in evaluating the merits of these projects some of the criteria that were included in the statute. We offer that for your consideration.

Lastly, I wanted to suggest that if it would be of value to the Department, the Environmental Law and Policy Center is actually ready to offer its assistance in convening a one-day workshop somewhere in the Midwest to actually bring together practitioners on the ground who are involved in implementing renewable energy systems as a way to further illustrate what's been successful, to find out what's not been successful, and as well to identify those opportunities for immediate investment where there's going to be high likelihood for payoff. I've suggested this to a number of people, and I think we have the capability to put something together that might be very helpful to the Department and also help illustrate some other opportunities for investment that may not be apparent when looking at this at this level.

I appreciate the opportunity to comment today, and I would only say this: I wish when we were in office we had the resources you now have to work with. It's a tremendous opportunity. I applaud the administration and the President for his wisdom and foresight in promoting this element within the farm bill, and we look forward to the use of these resources to further promote the use of renewable energy systems.

Thank you again.

MS. : Under Secretary Dorr and distinguished members of the panel, thank you for the opportunity to meet here with you today. I'm Mary Holt Clause(ph) with Iowa State University Extension and the Agricultural Marketing Resource Center. The Agricultural Marketing Resource Center is a USDA project which was recently funded, which strives to help producers develop and maintain profitable value-added ag businesses. At Iowa State, we work with producers to determine ways to help improve profitability. For many years, our content providers have been very close to producer groups as advisors and counselors, and we believe maybe this will qualify us to provide some testimony today.

Agriculture faces many challenges. On the regulatory side, the necessities and environmental controls are accelerating costs and technical difficulties into the supply chains and processing sectors. On the revenue side of the equation, companies face a consistent global squeeze on the value of goods that they produce. The low value of feedstocks and products handled in the ag sector in and of itself limits profit potential. We propose that priority be given to firms to fund projects that use waste and byproduct streams. Further emphasis should be given to those that innovate at supply chain levels. We believe if the supply chains themselves are optimized with new endpoints in mind, we will get internal energy savings as well as new market revenues from further processing of these byproduct streams.

When we examine ag and food production, we find waste or byproduct streams being generated at various points.

Livestock, obviously, as we have heard today, has manure to deal with. Food processing has fat, fiber, protein, and starch byproducts, and sometimes wash water with BOD loadings. And as we heard earlier this morning, the lumber industry has significant waste which they must deal with. In all these cases, the regulatory costs of dealing correctly with these streams have substantially eroded any net value from these byproducts as currently utilized. The obvious need then is to improve the net value of these byproducts.

This value equation is related to energy, either in conserving it or through more precise management or capturing it and further processing streams.

These products that we deal with are often called co-products. It is our view that a co-product is a term only used if there's an actual net value produced in streams for a company if the materials are given away, which is frequently done in agriculture, or at cost in the company for them to dispose of, then they should be characterized as waste or byproduct streams. These byproduct streams could be the focus of the program developed out of this farm bill section.

As currently utilized and marketed, these co-products can represent a future threat to a company's profitability. In fact, many of those companies which may be affected by these are those that have been funded by USDA world development business programs or through the value-added development grants. We would recommend that this program fund companies that cause these byproducts to become an opportunity.

Waiting for technological solutions to these industries can be detrimental to true innovation. What is frequently needed are organizational solutions. Linking sectors of the supply chains in ways that contemplate the optimum values created for the byproduct stream is a solution. In most situations, technology currently exists sufficient to begin these high-linkage projects. The understanding of process control and economic optimization also exist, but what currently does not frequently exist is the motivation to coordinate these efforts at a supply chain level.

That motivation in the early stages would be enhanced by grants or forgivable loans as incentives to cooperate. That money will almost surely be leveraged by innovative areas emerging in two ways:

First, the new efforts to coordinate supply chains would generate innovation in the organization, governance, contract, planning, market, and pricing dynamics.

Second, if technology solutions are needed, these would be guided by demand generated within the linkage projects.



Let me provide an example of a threat that is currently happening in agriculture. In livestock, manure management can cause a consistent constraint to growth of profitability, and those costs are about to accelerate. In meat processing, the value of fat and other rendered byproducts has been on a 20-year decline and maybe reduced to negative values if regulation similar to the EU were to be enacted. In small-scale ethanol production, the byproduct streams are almost wholesale through the cattle feeding industry as a feedstock. This solution keeps the value of the material tied to low-value commodity feedstocks, which makes transportation or location costs a constraint to those processors' future profitability.

The following are examples of some opportunities that we see which would provide opportunities for farmers to take these byproduct and co-product streams into a profitable situation. For example, one of those is in ethanol. If corn is pre-processed by pulling out the germ, the oil and the phosphorous are channeled off before (?) the process, and these materials don't end up as manure in the co-products. This supply chain is further enhanced if producers were to raise low-phosphate corn. This channeling increases the value of each component and reduces energy necessary to spread high-phosphorous manure once the byproducts are fed to livestock.

Poultry waste is another area. Recently, an Iowa cooperative was given a value-added development grant to look at ways which they could utilize the turkey litter. The first thing that they'll be looking at would be the logistic model to discover transportation and infrastructure needed, thus mitigating as far as possible energy costs related to moving the material.

Second, this value-added development grant would be further processing or looking into the material into forms that are more valued in the marketplace. They'll be exploring the use of granular fertilizer for lawn care, substrate for mushroom production, or perhaps merely fractionating it into value components. This processing may be characterized as increasing the value density. This mitigates energy costs associated with moving it to its next destination. [inaudible] this project then may be looking at energy uses such as gasification, methane digesters, and others. By producing energy at the source of both the production and need, the system avoids both transportation and infrastructure costs.

In each of those examples which I just gave you, what we encourage you to do is to look at holistic supply chains and the net energy aspect of them. Instead of isolating solutions here and there that may have minor impacts, we encourage you to look at broad outcomes with several opportunities for energy improvement. Many of these new solution companies or organizations can utilize existing technologies. Also, we encourage them to be made aware of a

program such as the Department of Energy's Industry of the Future Program, and a former DOE program called the National Incentive and Competitiveness in Energy, Environment, and Economics, also known as the NICE-cubed project.

Since 2000, Iowa State University has led a DOE program for agriculture called Industries of the Future. This program has developed a road map to identify priorities and targets for biorenewable energy products and fund innovative supply chain projects. To qualify for this program, and we feel one of the reasons it's been very successful, grant applicants must link at least three of the four ag industries. These sectors are plant science, production, processing, and end use. This ensures that the activities are not isolated from market realities. We suggest the Industries of the Future Program be reviewed as a guide for grant requirement and look for ways to leverage it into DOE efforts and to the ag area.

Measurement of results we've heard from a number of speakers today will be crucial. The NICE-cubed program at DOE provided a standard method for calculating and measuring outcomes. We recommend that USDA generate calculation and measurement standards appropriate to the intent of the farm bill language and make these available in [inaudible] as a reference and planning tool. This would also emphasize the need to carefully plan and account for energy results. You might want to refer to the NICE guide as you begin to develop your own [inaudible].

It is envisioned that some of the work of this USDA program can be extended to America's agricultural industries providing energy-efficient, holistic system that can help provide profit back to America's farmers. We applaud the USDA for providing leadership to this program and seeking input from constituents to listen to our comments.

I thank you for your time.

MR. : Good afternoon. First off, I want to thank you for turning the temperature down in the room this morning. It made us Minnesotans feel at home.

[Laughter.]

MR. : My name is Michael Sparbee (ph). I am a project development director for the Agricultural Utilization Research Institute. AURI is a 501(c)(3) nonprofit corporation created to improve the economy of rural Minnesota through the development of new uses, new markets for agricultural commodities. Our mission is to provide assistance to producers, commodity groups, agricultural processors in an effort to develop new value-added uses for Minnesota farm products.

Since our inception, our sole focus has been to develop value-added products that provide a direct producer impact.

Creating innovative new uses and expanding markets for raw commodities is important for a strong rural economy. One key focus area includes renewable ag-based energy. Our efforts have included more than a decade of work in biodiesel, extensive research into biomass fuels from crops and crop residue, and research into alternative energy sources such as anaerobic digesters.

AURI provides scientific technical assistance, applied research, engineering services to producers, producer groups, and agricultural processors. We offer laboratory facilities for product development, testing, and scale-up. These laboratories are equipped to enhance food products, cereal grains, meat and animal products, fats and oils, as well as co-products from food processing waste, crop residues and more.

With a staff of over 30 people, AURI offers appropriate expertise to complement our unique facilities. AURI has been a leader in the producer-driven--or, excuse me, Minnesota has been a leader in producer-driven ventures, including cooperatives involving ethanol, sugar beets, hogs, aquiculture, soybean processing. AURI has provided assistance to create new uses for these and nearly 40 other commodities that are grown in our state.

AURI's experience in working with value-added products includes fuels, industrial products, consumer goods, personal care products, and food products. As an organization, AURI has logged hundreds of thousands of hours of assistance to more than a thousand different projects.

It is with that experience in mind that I would like to offer the following comments relating to the expansion of rural renewable energy systems.

Number one, it is our belief that projects that should receive funding include technologies such as methane digesters, cogenerators utilizing biofuels like biodiesel. These are proven technologies powered by renewable resources. While the technologies are proven, in many cases some financial incentives may be necessary to make them economically sustainable.

Projects relating to renewable fuels, including biodiesel, digesters, biofuels, should receive priority in funding. These renewable ag-based energy sources have real potential as long-term energy solutions.

It is also our belief that both proven and innovative technologies should be supported by Section 9006 with a greater emphasis placed on innovative technologies. While proven technologies have been shown to be technically sound, there is no guarantee that they are economically viable. In some cases, assistance is needed to help them to be sustainable.

Number two, as an organization that works with entrepreneurs, start-up companies, and farmer-owned cooperatives, we see on a daily basis the importance of a healthy cash flow. For this reason, we recommend that financial assistance be provided in grant form. This allows funds to be utilized more directly by businesses while not creating challenges with their cash flow.

Number three, there are many factors to be considered when determining fund recipients. It is our belief that preference should be given to innovative projects with the greatest potential to provide energy from renewable resources. As an example, biodiesel is a renewable ag-based fuel with a bright future. Not only does it offer a cleaner alternative to petroleum diesel, its development is widely accepted as a fuel. We have--we'll give it--as being accepted as a fuel will give a significant impact on the rural economy. Methane digesters, biomass burning, and other innovative ideas serve as examples of potential energy sources that can help expand rural renewable energy systems.

Number four, support for renewable energy systems is available on a limited basis through sources such as the U.S. Department of Energy and the Small Business Administration. Programs also exist on the state level through respective Departments of Agriculture and Departments of Commerce. Many regional and local entities have mechanisms in place to support renewable energy systems. These sources include foundation and rural economic development commissions. While these sources are important, it is key that USDA lead the way in providing support for the rural renewable energy systems.

I appreciate the opportunity to offer these comments to you today. As a project development director, I see firsthand the extreme interest from rural communities for renewable energy. I am encouraged by your commitment to the renewable energy systems, and I wish you success in establishing the criteria for providing funding to support these systems.

Thank you.

MR. CHASE: I want to thank the USDA for holding this meeting and also their indulgence in this long meeting, particularly for folks like myself who procrastinated on sending their RSVP in. So here I am. You're on the last page of the speakers, so you'll get there.

My name is John Chase (ph). I'm with the American Wind Energy Association. We appreciate the opportunity to provide comments on the renewable energy and energy efficiency improvements section, Section 9006, of the farm bill. AWEA is the national trade association for the wind industry. We've been around since 1974. We serve as the primary advocate for the industry before Congress, the administration, and the federal agencies.

Wind energy is one of the fastest-growing energy technologies in the world. Here in the U.S., wind energy has recently seen enormous growth in states such as Texas, Minnesota, and Iowa, and others. The bulk of new wind development is in rural America, and on top of the clean home-grown electricity produced from wind, the most important benefit is the significant rural economic development that farmers and ranchers gain from wind energy development. Whether through lease payments from utility-scale wind development to metering programs that allow customers to roll back their meters, wind energy is and will continue to play an important role in our nation's energy mix.

This monumental clean energy title of the farm bill represents another opportunity to promote and encourage the use of renewable energy resources. We'd like to see these funds, these important funds, distributed and disbursed as soon as possible so these important projects can get up and running.

In general, we'd like to associate some of our comments to other groups that have spoken here today because there have been some excellent comments that have already been made, primarily with those of the Environmental Law and Policy Center as they relate to wind energy technologies.

While large utility-scale wind development receives most of the headlines, we would ask that a major emphasis of the program go to support small-scale wind energy development. Small wind systems, or those rated 75 kilowatts and below, are used for both water pumping and electrification, have a rich history with farmers, and today's high-tech versions have a bright future.

We support full grants for small wind projects as well as additional loan and loan guarantees as provided under the section. These programs can help drive down the manufacturing costs of small wind systems and make them a more economical choice for farmers and ranchers.

We also strongly encourage that grants or loans not be reduced by additional project support from other federal, state, local, private sector, or public sector programs. We believe the process for acquiring a loan or grant should be simple, fast, and consumer-friendly. One example we encourage you to look at would be the emerging technologies rebate program in California.

Utility-scale wind energy is undergoing a boom in the U.S. In 2001 alone, over 1,600 megawatts of new wind energy capacity was brought online across the country. Utility-scale projects can be difficult for individual farmers or ranchers to put together due to the necessary capital and tax appetite needed. We understand the concerns of some groups that, due to the limited funds available under Section 9006, some limitations may be placed on large-scale

wind projects. At the same time, we strongly encourage grants and loan guarantees for some projects. Utility-scale wind projects are very capital-intensive, and high loan costs are a significant barrier to small-scale developers. I'm going to close there to get things moving, and we'll submit some written comments. But I appreciate the opportunity. Please use us as a resource, and we look forward to working with you.

MR. : Hello. My name is David Cal-(?) from Luverne, Minnesota, and I'm pleased to be here, Under Secretary Dorr and distinguished panel. I am a farmer. I live in extreme southwest Minnesota. I don't know if anybody knows it or not, but with all of the ethanol plants growing up in our area and all the wind farms, Luverne, Minnesota, is the center of the renewable energy of the world, believe it or not, because we do have a huge amount of ethanol, a huge amount of wind farms, and we've been very privileged to be a part of that.

Our co-op started in 1995 as an idea among 200 farmers. I'll give a brief overview of where we've been and where we're going. And in 1997, we were out doing our fundraising and our equity drive, and we wanted to do a 12-million-gallon ethanol plant. Thanks to the help of David Gaffney (ph), USDA, B&I loan guarantees, about every program available, we were able to completely build and finance a 12-million-gallon ethanol plant that is now running at 20 million gallons a year. We have 400 delivery agreements buyer members. We returned back to our farmers in the first three years of operation nearly \$1 per bushel over the market price they would have received otherwise. It's been an extremely successful program.

Out of that grew the need to do more things, but we have found that working together with 200 farmers that we need to be looking at other things. Trying to raise hogs, corn, and beans in this competitive market has not necessarily made a living that we want to have and a place for our children.

So we've started working together, and we found out if the 200 farmers quit competing against each other to rent land, buy land, but invest in projects that--we found out that with a different way of investing we were able to sustain our way of life in rural America somewhat better.

We went on to work with projects in Craig, Missouri, Monroe, Wisconsin, Plainview, Nebraska, even spoke at the development meeting down in [inaudible] corn processors. So we've been helping farmers all across the nation.

My heart is with the farmers. We have one success story [inaudible] that's been very successful. I find myself talking to farmers in Nevada, Idaho, Washington State, Texas, Mississippi, Missouri, and that's probably all within the last three months. They're looking--they're looking for hope out there. And this is one of the greatest things we

have. We can transform our surplus commodities, whether they be corn, potatoes, or other waste, into renewable energy systems. And this is one of the things that I think this program needs to utilize. But we do need to make sure that there's a way that the farmer producers can utilize this program to their advantage.

One of the other things that we have done--and we're blessed in southwest Minnesota to have a lot of wind. Sixty-six members out of our co-op invested \$3.4 million in the last three months to build four wind towers for 3.8 megawatts of electricity. It's a wonderful thing that they're doing, but we find it really difficult to utilize federal production tax credits and stuff like that because farmers don't necessarily have passive income and have a hard time utilizing these credits.

One of the other obstacles we ran into with the wind energy was if we were to accept a grant, we would be ineligible for the federal production tax credit to utilize it. This is a quirk that I think needs to be addressed. Our attorney is very solid on this, that no matter if the grant is small or large, it makes you ineligible for the credit. Other attorneys have said that the credit will be discounted equal to the amount of the grant. But I think this is something that needs to be addressed.

Also, on the ethanol industry, we are cooperative in our ethanol plant, and there is a small ethanol producer tax credit worth up to \$1.5 million per year for plants under 30 million gallons. As farmers and as organizers of the cooperative, we are ineligible to use that credit. If we accept the credit, it would cost us more money to the add-back provisions in the tax code. So a program that was designed for us costs us money, so we have to formally decline it every year. This is another area that as farmers we're very sensitive to.

One of the things that has happened in Minnesota, and there are--you've heard a lot of farmer co-ops. We don't have a monopoly on insight and wisdom in our area. We just happen to have a forward-thinking legislature in Minnesota that helps stimulate a lot of these projects over the years. And what we've learned we also are trying to pass on to other plants.

But one of the things we have learned is that when you put these projects together, a lot of them tend to get undercapitalized. You know, if there's one thing if I was going to wish with this program, it's a way that you could leverage these funds to get the farmers to put more money into these projects, to get them capitalized at a level where they would be basically foolproof or failproof because some of these projects are capitalized at 20, 30 percent equity, and they really should have 50 percent equity.

One of the other things we've learned is that putting together these projects--and I've helped to advise on a lot of projects. When a farmer invests \$10,000 in a project and gets a real good return on investment, it's not enough to save the family farm. He'll invest \$300,000 in a hog unit. He'll invest \$200,000 in a combine. He'll invest \$30,000 in a pickup. He'll spend \$3,000 an acre for land. We need to do something to kind of change the way he invests. If he can put larger dollar amounts into these projects, working with his friends and neighbors, that will return dollars back to the farm in order to help sustain his way of living and have families live there. So that would be one of the things I'd like to see, is leveraging these funds.

The other thing that I see out there is--and I don't mean to take this negative, but we have a lot of people that are suffering from tower envy or ethanol envy. They want a project in their backyard, and they deserve a project in their backyard. But it's not necessarily the most feasible place for the project simply because they might not have the feedstock to supply it or they might not have the wind to run the towers.

If I was to put together a wish list of something here, I would like to see a way that farmers could form cooperatives or unite in different parts of the country and basically network together --.

[Break in recording.]

-- other than that, as far as the grants, of course, looking at the list of stuff here, I think the projects that should be eligible for funding, they need to be feasible. But at the end of the day, they still need to provide affordable energy. We live in a Wal-Mart society where everything is affordable, and if we're going to put up wind towers or ethanol plants, we need to have affordable product coming out of the end of that pipe. So if we're going to go through all the motions of doing this, we need to be on the--we need to be able to sell that at a price--not necessarily at a premium, but be affordable. And we can do it. The technology is there.

There are certain types of funding that should receive priority. I think, yes--and I don't think it needs to be so much the project as it is the number of people who benefit from the project. In other words, if you have a \$50 million ethanol project but you have 5,000 people who network together to build that project, I think that should receive priority over, say, some other one. There should be some division factor or something as to the number of people that are benefiting from this farm bill project, it would be--you know, putting the dollars where there would be the biggest bang for the buck type of thing. I can safely say that what we've learned from Cornerstone and what we've learned from helping other people and what we've learned from even the State of Minnesota providing incentives to help us build



these things, it has really changed the way we farm and the way we do things. It's changed us so much for the better.

And I'll close with one other thing. When it comes down to rural development--and I learned this from David Gaffney. When we were filling out all those applications, he kept talking about jobs and job creation. Our plant in Luverne has group insurance as one of the--we have extremely high rates, and it isn't because the people are old and dying. It's because the majority of our members are having babies or are unemployed. So it's doing exactly what it's supposed to do. We have a very young workforce in a rural community, and they're raising their families there, going to church there, going to school there, and having their children there.

So we feel very blessed with what we've done and where we've come, and hope we can help influence the future. Thank you very much.

MS. : Good afternoon, Under Secretary Dorr, distinguished panelists, and colleagues in the audience. I've actually brought a PV (?) solar panel with me to demonstrate PV's scalable, proven, portable, and replicable [inaudible]. You can see right here it's pretty small. And PV can help USDA help farmers.

Thank you for the opportunity to present comments to you about Section 9006 of the farm bill. My name is Mary Shaffner (ph). I represent Evergreen Solar. We're a U.S. manufacturer of [inaudible] solar energy cells and modules using our patented string ribbon, multi-crystalline technology. This proven technology allows us to use less silicon and will allow us to achieve greater economies of scale in manufacturing. Our 150 employees proudly manufacture American solar in Marlborough, Massachusetts.

We laud your efforts in providing assistance to the rural communities in America. Section 9006 will certainly build upon your tremendous efforts already in place. It will increase farmers' and rural businesses' economic competitiveness through efficiency and renewable energy applications. It will make environmentally benign technologies that are currently cost-effective but have high up-front capital costs accessible to the rural community. It will increase U.S. energy security, and it will provide jobs in America.

We at Evergreen ask that you take extra consideration when reviewing the potential for PV or solar. PV is a proven, cost-effective, non-polluting, and scalable technology perfectly suited for a myriad of replicable agricultural applications, and I won't go through all of them because some of the other people have before me, but it's distributive generation and remote power for water pumping, fence charging, fish pond compressors, lighting, and any sort of remote or building applications.

PV, although the most cost-effective technology to provide power in remote locations, is often overlooked because it provides--because it is small, but that means it also provides scalable power. It can be one watt to power a fence charger up to a kilowatt for water pumping, or later. [inaudible] single-source megawatts often sought after in programs. However, PV puts power where it's needed in multiple locations and where it can provide the most benefit. PV would allow you to reach thousands of individuals and farmers who need power to run their business.

The high up-front capital costs associated with our systems make purchases out of reach of individuals and small businesses without access to grants and loans. Combating these high up-front capital costs with loans and grants through Section 9006 will allow farmers to attain the benefits of PV. PV is incredibly long-lasting. PV modules are guaranteed for two decades and last much longer. PV is scalable. You can add more power modules when necessary if your load becomes larger over time.

PV is portable. Ranchers and farmers can trail out our systems to where the cows are to provide pumping or where the irrigation is need. PV requires little to no maintenance and no fuel, saving money in the long run.

PV is economical. When compared to extending a line and step-down transformers and wires, PV often provides the lowest-cost solution.

For small applications such as fencing and lighting, PV sells [inaudible] equipment, meaning that no wires need to be run. The application can be installed where the power is necessary.

PV causes no environmental pollution. With electricity from the sun, unlike diesel and other fuels, there is no air nor water pollution. PV is a proven technology. Applications and modules are in the field and have been operational for decades.

Implementing solar reduces our dependence on fossil fuels, increasing energy security, and does not produce the pollution associated with burning fossil fuels. The Natural Renewable Energy Lab in Golden has produced a book entitled "[inaudible] for Farms and Ranches." It's available online, and it provides detailed case studies of more agricultural applications.

We at Evergreen Solar encourage USDA to set aside 20 percent or a significant percentage of Section 9006 funds for PV applications. Because of its replicable, scalable nature, PV will especially help small rural farms and businesses. The high up-front capital costs associated with PV could be made manageable through 9006 loans and grants, thereby

providing access to a proven technology, enabling thousands of farmers throughout the country to implement proven, environmentally friendly, and cost-effective PV applications.

I'd ask you to envision--now we see on the highways, we see solar panels have replaced the signage, the diesel signage machines, and I'd ask you to do the same for farms, replacing the diesel with solar.

Thank you for the opportunity to comment.

MR. : Mr. Secretary, I need to take leave to make an address, so I would ask that Don Sibelius from USDA Forest Service [inaudible].

MR. DARBY: Good afternoon, Under Secretary Dorr. Good to see you again. Members of the panel, members of the audience. My name is Paul Darby. I'm the executive director of the Southern States Cooperative Foundation. We were established three years ago to provide technical assistance to farmers and ranchers and their rural communities to establish value-added agricultural enterprises, primarily cooperatives. Our mission is to be a committed partner with farmers and their communities in the development of those businesses, and we do receive funding from USDA currently.

We work in five states, and we have more than a dozen projects underway. We believe that there must be sound business practices and a business focus to the development and to the implementation of Section 9006.

Now, we think there are certain keys that should be followed. First off, there has to be basic business feasibility. There must be a strong business plan, even if you're just putting it on as an add-on on a farm.

Now, if you're establishing an enterprise as a business, there should be the strong leadership and producer support, and there must be those producer dollars on the table to make sure this works. So I echo David's comments about that.

Now, our involvement in bioenergy and in biofuels is with one project in North Carolina. It's the grain growers cooperative in Zebulon. They have 450 members. They're about two years old. They're all grain growers, not necessarily one grain. There are corn, soybeans, other grains.

They've done several things that we think provide a model for how to move forward. First off, they have conducted the feasibility study. They've developed business plans. They have the strong producer support. They have the strong community support, and by community, I define that statewide to be their State Legislature, and in the case of North Carolina, it's an organization called the Golden Leaf

Foundation. That's a group that was established out of the tobacco settlement funds.

That organization has made a \$10 million commitment toward a biofuels project that is being developed by this cooperative. Now, they're going to develop a 15-million-gallon soy/diesel production facility. Because these are mostly small producers in North Carolina and they don't necessarily have the financial resources of a lot of other groups around the country, they're looking to establish a majority-owned producer business. So it's going to be an LLC very likely.

Importantly, they're working with probably the most successful soy/diesel operation in the country, West Central Soy out of Iowa. They've been a very good partner.

Now, they face challenges and these challenges, I would submit, are going to occur for others as well. Having the capital to finance the entire project, having the--adopting the technology--and while definitely soy/diesel is not new technology, there certainly aren't a lot of soy/diesel plants around the country.

Now, we think there are opportunities for USDA to look to programs that are currently working very well. We would suggest the model for the value-added grant program works well. We think the red light program works well.

As to specific questions that you've asked to be addressed, on the issue of eligibility we think it's important to go ahead and use the standards. Now, we think a critical one is a number of producers banding together, either in an association, an LLC, or a cooperative, to take advantage of this section. We think there must be basic economic feasibility, and that has to be real feasibility. We think there should be a strong business plan and that there must be the likelihood of replicability.

As to a priority, we think partnerships are critical, we think strong community support is critical, and we think geographic diversity. We don't think putting all of the plants or focusing all of the dollars in one section of the country is either necessarily good or advisable.

On the question of new technology, we recommend a balance. Again, take some risks, try the new technologies, see if they can be implemented successfully, but, again, with the eye toward replicability.

As to the type of assistance, we think, again, grants aren't the answer. Not today. We think grants can help. They can nurture, they can support. But there must be the fundamental producer dollars going on the table to advance this.

And the last point I would make is geographic diversity. Again, spreading these across the country I think provides important lessons learned, and that will give you the best opportunity for success.

Thanks very much for taking the initiative to have this. The administration is to be applauded.

MS. KEMP: Good afternoon, Under Secretary Dorr and members of the panel. I, too, appreciate your stamina in hearing our input all day long. Thank you very much.

My name is Loni Kemp, and I'm with the Minnesota Project. You've had a few Minnesota visitors this afternoon. We're pleased to present our recommendations for guidelines governing the new grant and loan program in renewable energy systems and energy efficiency improvements.

The Minnesota Project is a nonprofit organization dedicated to sustainable development and environmental protection in rural communities. For over two decades, we have brought farmers and environmentalists together to find common ground on state and national policy. We've organized a Sustainable Energy for Economic Development Coalition in Minnesota, and I serve as co-chair of the National Campaign for Sustainable Agriculture. So we work with a lot of other groups around the state and around the country.

We're trying to help farmers find solutions to environmental problems that work for their farming system and that make sense economically, so we're very enthusiastic about this new program, the new energy title in the farm bill, and we're looking forward to helping engage farmers in producing renewable energy as well as using their energy more efficiently. So we have four comments regarding Section 9006.

The first suggestion is that you consider focusing the program--there will never be enough money for all the demands that there will be for it, we don't think, so we would like to suggest that you focus on moderate-size and small farmers and ranchers. The largest farmers and ranchers in the country, maybe as few as the top 5 percent or 10 percent, already have easier access to capital for renewable energy programs, and so we think the public dollars should focus on small- and moderate-size farmers and ranchers who don't have such easy access to capital. The second point is that especially in the first years of funding, we would like to suggest that you evenly split the funds between energy efficiency projects and renewable energy projects. Energy efficiency improvements and renewable energy systems are both included in the purposes of the program, but they're very different kinds of projects, and they have different standards of comparison. And we strongly support both.

But in numerous studies of energy efficiency, it's been clearly demonstrated that it's much cheaper to produce a kilowatt of energy usage than it is to generate a kilowatt of electricity, whether it's renewable or otherwise. So if all the funds were competing just on cost-effectiveness, you'd probably give it all to energy efficiency. However, we really think maybe the best value would be in splitting half and half between energy efficiency and renewable energy production, and they'll probably need separate criteria to evaluate the proposals.

The third point we'd like to make is regarding the feature of providing energy audits to farmers to help them figure out what their best opportunities are. Energy efficiency opportunities are like hidden treasures which, once uncovered and nurtured, are relatively low-risk investments with a short payback period. Renewable energy projects are often very highly visible, and it may be more exciting, but they often have longer payback times and higher risk. So the trick for implementing the energy efficiency part of this new program is to uncover those opportunities for energy efficiency and conservation and then partner with the existing organizations out there who can help with this.

Many utilities currently offer energy audit programs at reduced rates, subsidized rates for their customers. For example, in Minnesota, all Minnesota electric utilities, including the rural electric co-ops, are required to offer energy audit programs. And we think that partnerships should be made with these existing audit programs to facilitate the funding of energy efficiency opportunities in this new program.

Also, there's another provision in the renewable energy title of the farm bill which calls upon USDA to offer energy audits to all farmers nationwide, and we'd like to encourage you to move forward with that quickly so that that can interact with this loan and grant program.

Also, we think that eventually there might be some good opportunities. The new Conservation Security Program being developed by the Natural Resource Conservation Service has conservation, energy conservation, as one of the conservation purposes. And so it might be really helpful to link together the conservation planning and incentives with this program.

Also, we think that sometimes the energy efficiency opportunities that farmers will be installing are going to have a lot of similarities across the country, and you might be able to help take advantage of mass purchasing opportunities for Section 9006 participants. For example, now some energy companies offer the ability to purchase compact fluorescent light bulbs from a central website in order to get cost savings for everybody. That would be a good partnership to explore.

Our last point for today is to suggest that we think that anaerobic digester projects that receive EQIP grants should not be eligible to receive Section 9006 money because it's essentially double-dipping for public subsidies for the applicants, and that's going to possibly hurt other--the chances of other projects which might be more cost-effective than the digesters.

The EQIP program is well suited to handle evaluating digesters for manure because, although they can produce energy, they're primarily a waste treatment technology. At the very least, we feel that projects that--if you're going to allow projects to include EQIP dollars, then they should have to include those public dollars in their evaluation of cost-effectiveness for the public dollars invested. But preferable to us would be to require participants to choose one program or the other and not get subsidies out of both programs.

Thank you very much for the opportunity to share our input with you. We appreciate it.

MR. : Good afternoon, Under Secretary Dorr and other panel members. We're pleased to be here, and for clarification, I am representing the Department of Agriculture and Forestry from the State of Louisiana and speaking on behalf of my Commissioner, Commissioner Odom, who is not able to be present today.

On behalf of the farmers of the State of Louisiana and the entire agricultural infrastructure of rural America, I appreciate this opportunity to be able to address this group. Our purpose today is to discuss some of the merits we feel should be considered in implementing a loan guarantee or a direct loan or grant program to finance renewable energy systems and make energy efficiency improvements. The considerations by USDA for determining eligibility for economic assistance through these programs we feel should be balanced by measures which demonstrate evaluation of some of the following points, one of those being minimal transportation. Favorable consideration should be given to local fuel stocks that have minimal transportation requirements in relation to the energy generation facility. This applies more to the biomass. This is extremely important in biomass renewable fuel stocks since the high mass to energy ratio of most biomass fuel stocks results in high transportation costs, which must be expensed by either the facility or the producers of the fuel stock.

Next is fossil fuel utilization. We should allow to some degree perhaps a minimal, something less than 25 percent annual average, consumption of fossil fuels for these facilities. Fossil fuel utilization should only be allowed for such things as start-up, production optimization, emissions controls, and maintaining output reliability in those facilities classified as renewable energy systems.

To maximize funding, whenever grants are utilized for design, adaptation, and feasibility, it enables the stimulation of community and private financing which acts as an extender of USDA funds. By providing financial confidence in the process, funding from sources other than USDA become available.

Next, on multiple production of renewable fuels and electrical energy, production of and on-site utilization of renewable fuels and electrical energy rather than utilizing fossil fuel for operation should be rewarded. This concept demonstrates the optimum energy savings by being self-sufficient while generating electrical energy for export in addition to the production of a renewable fuel production, such as ethanol.

Then on the environmental side, we would look for the environmental benefits. Facilities which employ the most feasible environmental control measures on site should receive additional consideration. And even extra points of consideration should also be awarded when there are additional environmental benefits to upstream suppliers of renewable fuel stocks. An example would be the elimination of residue burning in those fields producing fuel stocks as a result of those fuel residues being utilized by the factory for energy generation. This reduces air emissions since the facility has incorporated air emission control equipment, and fuel residues are no longer burned in the area fields. This enhances the air quality of the community.

Environmental base grants should be available for facilities--should be eligible for special funding assistance through grants specifically targeted to additional equipment investment that is targeted to enhance environmental controls and provide a reduction in facility emissions. The investment required for optimizing environmental emissions in a renewable energy facility can escalate beyond economically feasible budget limitations. Extra financial assistance for investment in the environmental equipment not only strengthens the economic feasibility of the facility, but also benefits the community by providing cleaner air.

Next, on geographic and commodity dispersal, developing new geographic areas and utilization of new commodities into the production of renewable energy balances the program for all of America. The benefits of USDA's support should be spread across the geographic areas of the U.S. and specifically focused to the utilization of as many of the commodities produced in each area as possible.

The commodity return value, the value of return to commodities utilized should be sufficient to support the production of the feedstocks utilized commensurate to existing markets. Waste product utilization produces little



economic value, if any, to the farmer and does not generate an economic resource return to the community. Therefore, primary commodity utilization should carry a greater consideration than waste product utilization.

Then on the quantity of energy generated, the amount of energy generated should be compatible to the energy distribution and utilization capacity in the geographic area of production. The renewable energy proposed must also be able to demonstrate its ability as a reliable supplier of energy, year-in, year-out.

On loan guarantees, we feel that a fully functional facility loan guarantee program is needed by USDA to support the developing production of renewable fuels and energy generation until a creditable futures and exchange market for ethanol can be established to provide improved economic predictability in a developing renewable fuel commodity market and even possibly a renewable electrical energy market. A renewable electric energy market would capture the advantages that may develop as a result of a renewable energy policy supported by tax incentives.

On rural economic development, I would rather call it rural economic redevelopment. USDA should focus on economically depressed commodity production areas. Many areas of rural America are in desperate need of economic enhancement of depressed commodity prices. By USDA placing economic support into existing agricultural infrastructures, it salvages the rural community with a very low cost-to-benefit ratio since the existing agricultural structure benefits and regains viability. The current farm bill commodity production programs would gain support from properly targeted renewable energy support which focuses on geographic areas where commodity producers are experiencing Depression-style economic failures even while they are obtaining favorable yields.

And, lastly, on commodity efficiency combinations, special credits should be available to renewable energy systems that combine commodities for synergistic benefits. Renewable fuel production, when partnershiped with renewable electrical energy generation, provides for greater economic recovery from all the renewable commodities utilized and provides a facility that is fully energy self-sufficient.

These points have been rapidly mentioned in the time that we have allowed here. However, they're extremely important in rebuilding the agricultural infrastructure in the U.S. By capturing the economic growth that can be realized through tapping into the developing renewable energy industry, agriculture can recover from extremely depressing economic conditions.

Our office in Louisiana has been intensely involved in the feasibility studies for a multi-commodity facility that would produce a renewable fuel in the form of ethanol while

being fully energy self-sufficient with an electrical energy export for renewable farm commodities. This involvement in an ethanol distillery and biomass fuel power plant has brought the aforementioned points into our focus, and we hope that we can share this focus with you.

Thank you.

MR. : Good afternoon, and thank you for the opportunity to submit comments. In the interest of time, I'm going to limit my comments this afternoon and will be submitting more detailed comments for the record. My name is Patricio Sil-(). I'm the Midwest activities coordinator for the Natural Resources Defense Council, a natural resource and public health nonprofit advocacy organization with over 500,000 members, and the Natural Resources Defense Council appreciates the opportunity to comment on the implementation of Section 9006 of the Farm Security and Rural Investment Act of 2002.

The programs supported by the section can help farmers improve energy efficiency and invest in clean energy technologies while delivering substantial environmental, economic, and security benefits to the nation. And we strongly support USDA's efforts in this regard. Promoting energy efficiency and renewable energy in the agricultural sector is the most cost-effective way to reduce the environmental and public health impacts of energy use, including smog, acid rain, and climate change. Investing in clean energy technologies is also the best thing we can do to lower energy bills for farmers and ranchers and insulate them from energy price spikes that occur at times of peak demand or as a result of fluctuations in the prices of fossil fuels, while at the same time improving the overall reliability of the electric system and promoting rural economic development.

The benefits of reducing our dependence on oil and promoting clean distributive generation such as solar panels, fuel cells, and wind generators are potentially enormous. The size of the benefits depends in no small part on the design of the programs, how well they leverage private investment, address local needs, and build on lessons learned to date in this arena.

Among the program priorities and eligible technologies that should be evaluated in developing the criteria for this program, USDA should design programs that maximize the number of megawatts or megawatt hours and generation avoided or installed per dollar spent that drive investment in emerging technologies, overcome market barriers to commercializing clean energy technologies, i.e., market transformation, and identify the best options for long-term deployment of efficiency and renewables in the agricultural sector.

Fortunately, there is no need--and you've actually heard many examples already today--to start from scratch in determining how to leverage these funds to greatest effect. There's a wealth of experience at the state and local level upon which to build. In addition to many of the speakers from Minnesota, Louisiana, and elsewhere, and Vermont, New Jersey, New York, and California provide excellent models of market transformation programs that are designed to do just that. A recent report by ACEEE identified over 32 programs nationwide that are specifically directed at the agricultural sector today. And there are a number of priority technologies that we believe should be emphasized but, foremost, we believe that energy efficiency should garner the most attention in the design and development of this program. And energy efficiency programs should target technologies that are responsible for the greatest energy use on farms and ranches, including motors, building heating, ventilation, and air conditioning equipment, and lighting.

One example, ACEEE estimates that lighting accounts for between 30 and 40 percent of total energy costs for poultry farms. There are other examples in other agricultural activities.

Only technologies that are substantially above industry standards should be eligible for program support. If you're going to leverage the maximum you can out of the dollars you have, you should be focusing on raising the bar and encouraging the dispersion of those higher-performing technologies into the marketplace.

Clean energy programs should target wind, solar, sustainable biomass, and fuel cells, while recognizing that these technologies are at different stages of development, of maturity, and warrant different types and levels of support. A simple per kilowatt hour subsidy may be sufficient to drive investment in new wind. However, a sustainable biomass facility may require significant up-front equity investment, including grants or other financing instruments.

Sound waste management practices should require methane capture from animal farms, and financial support should be limited to the incentive needed to convert captured methane into electricity. Support for biomass should be limited to sustainable feedstocks, which should specifically exclude municipal solid waste incineration, which contains a substantial amount of inorganic matter and is not properly considered biomass. And forest materials are other than pre-commercial thinning/burn.

The types of the financial support and the criteria for determining the amount should be crafted in ways that the funding mechanisms are flexible enough to respond quickly to changes in the marketplace and that, to the greatest extent possible, provide the minimum funding necessary to drive

investment in high-efficiency technologies and get new clean-generation projects off the ground.

And with that, I'd like to conclude my comments, and we will be submitting more extensive comments for the record.

Thank you.

MR. KING: Good afternoon, Under Secretary Dorr, other distinguished members of the listening panel and members of the public. I'm Mitch King, president and general manager of the Old Mill Power Company, a Charlottesville, Virginia,-based family-owned small business.

The Old Mill Power Company sells electricity to produce using renewable, low-environmental impact primary energy sources, such as energy from the wind, the sun, falling water, biomass and waste-to-energy conversions.

As the name implies, Old Mill was formed to take advantage of existing Virginia law in 1996 that favored small hydroelectric power plants. Since then, we have lobbied the General Assembly in Virginia to expand that special provision in the law to include other forms of renewable energy, such as electricity from the wind and the sun.

I wanted to speak to you today on three major points. One is to define the type of businesses or activities which I think the Section 9006 funds should be used to support; and, two, what type of projects should be supported; and, three, how they might be funded.

I should also like to point out that the Old Mill Power Company is, although it began as a small hydroelectric power company, currently, it's under contract to own and operate the second-largest solar array in Virginia, the largest being owned by the Tennessee Valley Authority, and we have a strong interest in the development of wind projects, particularly small wind projects.

In that regard, we are under contract to Environmental Resources Trust, a nonprofit organization here in Washington, D.C., which is receiving money from the Department of Energy to investigate the legal, regulatory, administrative, economic and cultural impediments and inducements for the deployment of small electric-generating windmills in Virginia.

So, from that point of view, let me point out what, at this point in time, I see as some of the important things that I have not heard mentioned by other speakers today.

One is the type of entities that should be supported by the 2002 farm bill. In that regard, I'd like to point out that in the discussion I have not heard anyone say that the definition of rural small businesses should also include, assuming that it's legally possible, nonprofit institutions

such as local governments, public school districts, community colleges, park authorities, producer and grower cooperatives, environmental and wildlife conservation centers, the YMCA, local YMCAs, for example. Those, seem to me, to be appropriate entities to be funded, from a rural economic development point of view.

When considering what type of projects should be funded and at what level, I encourage you to recall that many of the technologies that you've heard about today have been proven to be technically feasible in the right locations. For example, a wind facility needs to be properly sited. But, generally speaking, there's nothing experimental about this.

So the real issue, I think, that you need to face is how to encourage the deployment of these systems, given that we understand them to be technically feasible, regardless of whether we're talking about wind, solar, small hydroelectric. Even biomass, for the most part, is known to be technically feasible. There's some small implementation problems, perhaps, with large-scale digester gas, but we've been making digester gas for a long time and using it profitably.

So, when considering that these are proven technologies, then the issue comes up why aren't they deployed more widely, and that brings us to a point where we should be considering some educational outreach activities. We have to educate the public, ranchers, farmers, small businesses, small rural businesses that these are technically feasible.

This isn't something new. Our country used to be dotted with small wind systems that pumped water, for example, and now we just want to use similar systems to generate electricity that's not technically challenging. We need to have the education programs to address why this hasn't been done, and that, I think, calls for grants. You just can't find a way to loan money to an educational institution to do this kind of outreach.

I also would like to point out that many types of renewable primary energy sources, such as energy from the wind, the sun and so forth, tend to be free or low-cost primary energy sources. However, again, given this free energy source, why don't we see them deployed more widely? And the answer there, I think, is dependent upon an understanding of the financial situation of a farmer or rancher or small rural business, and their cash-flow needs, and the nature of a renewable energy system.

In order to capture what amounts to low-intensity energy, like sunlight, wind, whatever, it takes a large capital expense. And if you have a cash-strapped operator, such as a farmer or rancher or small rural business, who faces a choice of putting up \$50,000, let's say, now, for a system that will last 20 years, a renewable energy system that will last 20 years, but won't cost him anything in energy costs

for the next 19 years versus putting up \$10,000 now for a diesel generator and \$5,000 per year for the next 20 years for the fuel to operate it, given the cash-flow issues, the answer has to be, to that operator, I cannot afford the \$50,000 up-front capital expense. I go with the \$10,000 diesel generator, and I just pay the \$5,000 diesel cost as I go along.

So the challenge, I think, for the Department is how to change that prospective, and I think the way to do that is through loan programs and loan guarantees, and particularly a revolving loan fund. From that point of view, by making the cash available to the operator without impacting their cash-flow situation, that's how you can encourage the deployment of these systems.

So then how to fund them, I've addressed that I think in terms of grants and the low-interest loans and loan guarantees. And the one final thing I want to finish with, I think, is that I'd like to encourage the Department to be sure to finance one or more zero-energy or net-energy exporting facilities, whether it be a farm, ranch or a rural small business.

I think that that makes a very strong public policy statement; that it is technically feasible and economically feasible, in many cases, for a rural small business or a farm or ranch to be either a zero-energy facility or actually a net-energy exporter, all that with no energy-related emissions.

Thank you for your time. I appreciate the opportunity to speak to you.

MR. LOWENTHAL: Good afternoon, Under Secretary Dorr, and members of the panel, and hearty participants. Thank you for your endurance. It's been a long day, and I just wanted to make a few comments. My name is Peter Lowenthal, and I'm the director of the Solar Energy Research and Education Foundation.

I wanted to share a few observations, but I won't be saying the word "photovoltaic" here today because there's a larger industry, not larger, but another industry within the solar family, and that is the solar thermal industry, an industry that has had considerable acceptance in the farming community. In fact, in my prior life, I used to service many of the solar systems installed at the USDA facilities in Beltsville. In fact, I had the pleasure of building and designing a solar-powered mosquito catcher, which might be of use again with the increased numbers of mosquitoes and those problems.

But I would like to talk a little bit about the use of solar water heating for the farming community, and the important role it can play throughout rural America. Most of rural America heats their water with electric hot water heaters. These units aren't very efficient. They require combusting

fossil fuels at a generation point, transmitting that energy through a transmission system, transforming it down to a local home, and then finally using an electric resistance element to convert that to hot water.

A solar water-heating system could simply do 70 to 80 percent of that on the facility itself, on the farmer's home. In expanding that further, certainly, commercial applications of this technology should be included and need to be addressed.

The solar heating industry hasn't had as much of the benefits of the restructured environment as some of the other technologies. We're partly energy efficiency and partly production, so it depends on who you're talking to, what exactly needs to be done to help facilitate that technology. We hope that these grants can help to put water heating back into the renewable energy family and into the rural energy mix.

One of my activities has been, in international activities, has been to work on the solar-drying energy task of the International Energy Agency. This task has been used overseas, with support from other countries, to look at the applications of solar air heating to pre-dry or to dry agricultural crops. Very little is produced in the soil that doesn't need to be dried as soon as it gets out. Unless it's frozen, it'll rot and perish. So we have used solar hot air heating to dry coffee, to dry soybeans. We currently have two applications in California doing prunes and walnuts. There are many applications that would be applicable to this technology, and many co-ops have their own processing plants and could use this technology.

In terms of some of your questions, many of the factors that I think will have, will receive some attention in determining where this funding goes, certainly the numbers of persons impacted and the greater number of projects possible, the better. Many of these technologies have strong financial incentives in place, and many do not, and certainly some equity in your judgment will be required there.

I do believe it should be open to all technologies and of all sizes. However, you will have to weigh those parameters. I believe proven technologies should receive some consideration, and new and emerging technologies should find funds and other leveraging from other activities.

Geographically, there's sunshine pretty much on all of the United States adequate for these applications. However, there are some areas of the country that still, to this day, heat their hot water with fuel oil. New England, in particular, is guilty of this, and hopefully those kinds of considerations will be taken into account.

Thank you very much.

MR. ELLISON: Is there anyone else who signed up to make comments whom we've overlooked?

[No response.]

MR. ELLISON: If not, I have a few closing housekeeping items before turning it over to Under Secretary Dorr for closing comments.

Listing of registration stakeholders is available at the registration table. A reminder, written comments will be received via e-mail until December 6, 2002. Send e-mail comments to pandor.hadjy@usda.gov. That's p-a-n-d-o-r [dot] h-a-d-j-y @usda.gov.

Written comments, along with oral comments, received today will be made available on the Rural Development website at [www.rurdev.usda.gov](http://www.rurdev.usda.gov) in approximately two weeks.

Today's stakeholder listening forum will be accessible via the Internet by accessing the Rural Development web page at [www.rurdev.usda.gov](http://www.rurdev.usda.gov) for the next 30 days.

And now Under Secretary Dorr has some closing remarks.

MR. DORR: Thank you, Bob.

You know, when we started this endeavor, someone told me the one thing you will learn today is that you need a cast-iron fanny, and I'm not sure that that was the case. Actually, this became a very enjoyable event today, and for all of you who stayed with us throughout the day, I hope you concur as well.

First, I would like to, again, acknowledge all of the folks here who were involved in technically providing their assistance--the two ladies in front who made sure that all of the PowerPoint presentations ran as scheduled, the other technical and assistance folks, those who helped guide people up to the stage in a timely manner, and all of those who I acknowledged earlier today for preparing this day, and I think it went very, very well.

Most importantly, I would like to thank all of you who have taken time out of your schedule to join us today in this effort to I think truly develop a unique approach to exploiting the opportunities that Congress and this administration has given us, in identifying unique and viable new energy alternatives that facilitate both efficiency and actual new sources.

It's always interesting, as I listen to the events today, that it's quite clear to me that the time has come when we're willing to look at renewables in a nonadversarial manner, one in which we recognize that the research has gravitated toward the point that much of it is



commercializable, that it now depends on a focus of how we apply both the social investment, the cultural investment and the actual hard-core business investment.

As we focus on these new methods for converting all of these resources into renewable and beneficial sources of energy and economic opportunity, I found it very enlightening this afternoon to listen to a couple of folks, particularly Mr. [inaudible], who suggested the need to figure out new and innovative ways to convert a lot of our rural asset or equity base into the kind of liquidity necessary to make some of these things happen.

It was also interesting to look at some of the multi-regional opportunities that were presented and particularly look at the dichotomy between those who felt that a more broad-based or a larger scale versus a more small-scale opportunity should be exploited, and this suggestion of the difference in scales I think is something that we'll have to look at very, very closely.

But in the long run, I was very, very encouraged by the collective willingness to collaborate and cooperate, not just across agencies within USDA, but across intergovernmental agencies, and also by those of you from the private sector who clearly are willing to innovate and take new approaches to this.

So, again, I thank you all for joining us. I think you all owe yourself a great round of applause for the efforts that you made in here, and I would encourage everyone to do so and then have a safe trip home.

[Applause.]

[Whereupon, the proceedings were adjourned.]